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ABSTRACT

The results of this survey are widely distributed to educators, policymakers, business executives, and the media to help America's leaders and the general public better understand what Americans know about the environment and how that knowledge relates to their attitudes and daily actions. The 1999 National Report Card examines the results of a 10-question quiz that looks at basic environmental knowledge and the persistence of strongly held environmental "myths"; that is, outdated or erroneous information about the environment. Sections include: (1) "Environmental Attitudes"; (2) "Environmental Knowledge"; (3) "Environmental Activities"; and (4) "Conclusions and Recommendations." (CCM)

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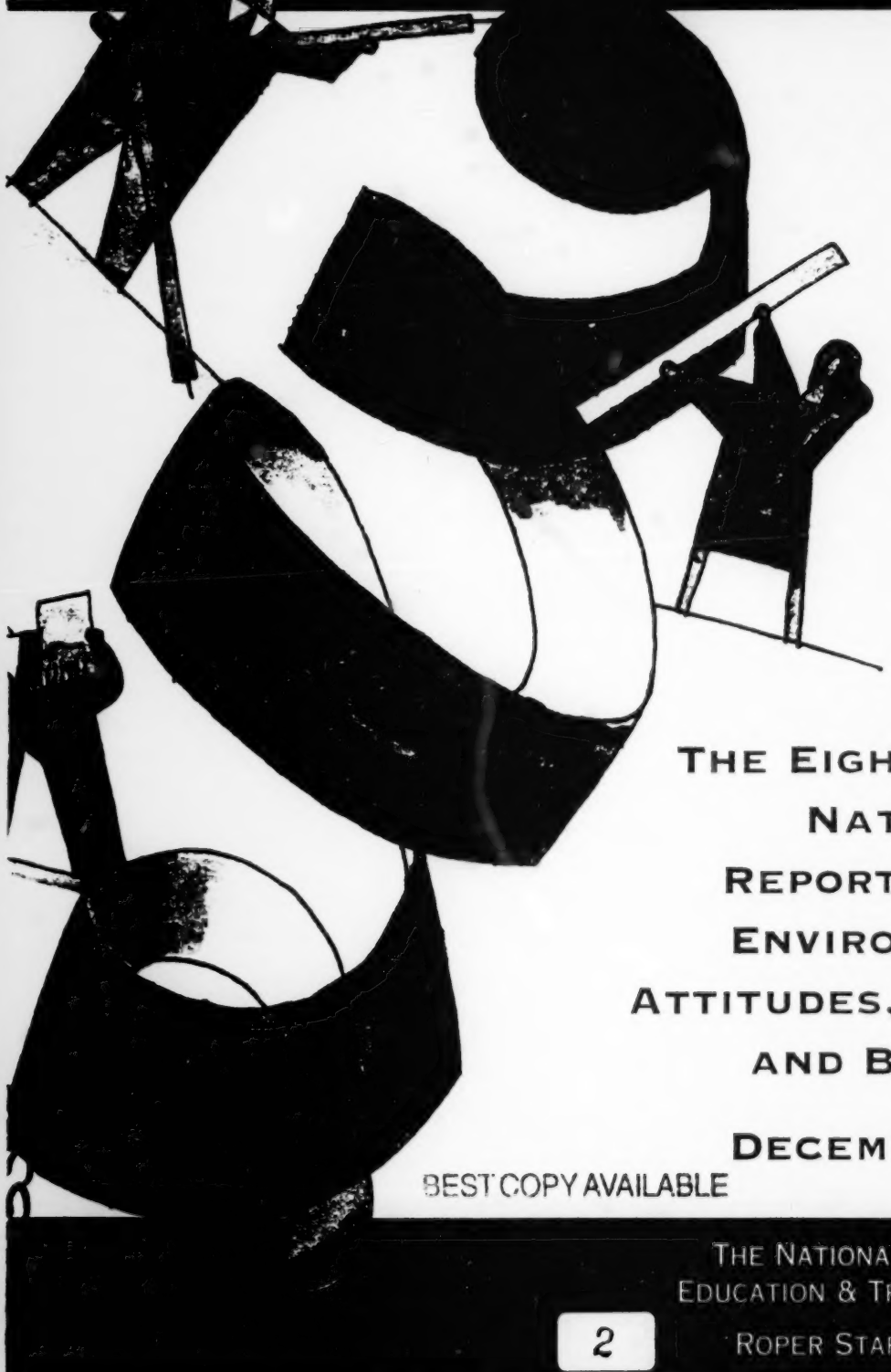
Environmental Readiness for the 21st Century



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The Eighth Annual National Report Card on Environmental Attitudes, Knowledge, and Behavior

December 1999

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The National Environmental Education & Training Foundation

Roper Starch Worldwide

1999 REPORT CARD:

Environmental Readiness for the 21st Century

The Eighth Annual National Report Card on
Environmental Attitudes, Knowledge, and Behavior

DECEMBER 1999

N•E•E•T•F
The National Environmental Education & Training Foundation

ROPER STARCH WORLDWIDE

About NEETF

The National Environmental Education & Training Foundation is a private nonprofit organization authorized by Congress in 1990. The Foundation strives to help America meet critical national challenges by connecting environmental learning to progress on issues of national concern such as health care, educational excellence, our competitive position in business and effective community participation in managing our natural resources. In addition to making leveraged challenge grants for outstanding environmental projects across the nation, NEETF seeks funds to support several innovative environmental education programs, which include, along with the annual NEETF/Roper Report Cards:

- **Wellness and The Environment:** integrating environmental health into our public health and health care systems.
- **Safe Drinking Water Program:** providing an educational backdrop to government Consumer Confidence Reports on drinking water.
- **Institute for Corporate Environmental Mentoring:** fostering business-to-business mentoring to help companies improve environmental and economic performance.
- **Environmental Education and Academic Excellence:** promoting effective, science-based and objective environmental education as beneficial to students' academic performance.
- **National Public Lands Day:** a nationwide, volunteer driven program improving and enhancing national parks, forests, lakes, wildlife habitats, and other public land sites.

Acknowledgments

The trustees and staff of The National Environmental Education & Training Foundation are grateful to all of those who helped support this survey. The 1999 NEETF/Roper Report Card could not have been done without the financial and technical support of the US Environmental Protection Agency's Office of Environmental Education. We also greatly appreciate the work done on the survey by David Lintern of Roper Starch Worldwide who, as account manager, oversaw the field research, analysis, and writing of this report.

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Foreword

Taking stock of our environmental "readiness" seems appropriate at this unique point on the calendar. Poised at the beginning of a new century, we are well positioned to consider where the American public now stands in relation to environmental protection and where we need to go. Few issues are likely to be more important in the early part of the next century.

How well suited are Americans to understand the environmental challenges we face? How well prepared are we to take action and make the decisions we will be called on to make? This 1999 Report Card demonstrates something we have long suspected: Americans are ill prepared to understand and address the complex and intractable issues that will be our greatest challenges in the 21st century. Even though concern for the quality of the environment and its relationship to human health will likely increase in the early part of the next century, knowing the issues and doing something constructive about the problems may be more difficult than ever.

Many of our leading environmental problems today and into the future will be the result of the accumulated actions of individuals. Issues such as freshwater shortages, global warming, systemic contaminants, run-off water pollution, and environmental problems caused by small businesses, homes, and automobiles will become more of a factor in our environmental future. Not only are these issues difficult for the public to understand in their full complexity, but they are also largely beyond the reach of government environmental regulation programs. Americans as a whole are vastly unprepared to address the suite of future environmental issues that will require personal knowledge and action. You might say our cumulative 'EQ' — our environmental intelligence quotient — is dangerously low. Rectifying this situation will require a much greater emphasis on education and training than ever before.

Despite some discouraging findings, there is much good news in the 1999 NEETF/Roper Report Card, especially for supporters of environmental quality. For a number of reasons, pro-environment sentiment and support are likely to increase in the coming years. The demographic reasons for this shift are discussed in the Report Card as well. I commend this report to your attention, in the hope that working together, we can become better prepared for our environmental future.

Kevin Coyle
President,
The National Environmental Education & Training Foundation

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Executive Summary

This report examines a simple question: are Americans environmentally prepared for the 21st century? The National Environmental Education & Training Foundation (NEETF) commissioned a survey to better understand what Americans know about the environment and how they view emerging environmental problems. This survey, conducted by Roper Starch Worldwide, includes an assessment of adult Americans' attitudes and behaviors toward the environment in addition to their environmental knowledge.

As environmental issues become more complex and increasingly the result of accumulated individual actions, the importance of environmental knowledge on the part of each American will increase. More will be required of both individuals and their leaders in our environmental future. Environmentally knowledgeable Americans will better understand what they as individuals can do to solve environmental problems and will be better motivated to take action. A knowledgeable public can also play a larger role in evaluating whether proposed environmental laws and regulations make sense, in determining what new policies are needed, in supporting government regulations and policies, and in claiming information that it is the public's right to know.

Unfortunately, the 1999 NEETF/Roper Report Card clearly shows that Americans are largely unprepared for these roles. On key emerging environmental issues, most Americans will need to catch up, if they are to understand the coming issues in environmental protection and help play a role in solving the problems.

Survey Results

The public's disturbingly low "EQ"* will block progress on many issues

- Americans are not prepared for our environmental future. Fewer than one in nine Americans gets a passing score of 60% on knowledge of issues likely to be major prob-

*EQ= Environmental Intelligence Quotient.

lems in the next 15-25 years. Just 1 in 25 scored 70% or above in a quiz of environmental knowledge.

- On average, Americans answered just three multiple-choice questions right on a ten-question quiz about issues in the next century.
- The public continues to engage in several simple activities such as recycling and saving electricity or water, that benefit the environment. But by and large, individuals have not embraced some of the most important actions that are within their power to control.
- There are important differences between what scientists judge as the most critical emerging issues such as climate change and population growth, and public awareness of these issues. These differences have significant implications for the ability of lawmakers and public officials to convince the public to take action or to understand the implications of these issues.

Environmental Readiness Report Card

ATTITUDE	
Support for the environment	A+
Willingness to work toward balanced solutions	A
KNOWLEDGE	
Understanding of causes of basic environmental problems in the 21st century	F
Agreement with experts on top issues in the 21st century	D+
ACTION	
Willingness to take steps to solve problems	B

Incorrect understanding of the environment will likely persist into the next century

- Myths and outdated information about important environmental issues remain entrenched as we move into the next century. Most Americans still do not know how most of the electricity in the United States is generated, some of the main causes of global climate change, or the most common source of water pollution of rivers and streams. Nevertheless, concern and support for the environment are high and likely to rise further.

- Support for environmental protection (70%) over the economy (18%) will likely increase even further in the first part of the next century as women, the younger generation, and urban residents increasingly move into positions of leadership. Thus, while the good economy has no doubt boosted support for the environment, it is by no means the only factor in current or future support.

- Support for government regulation of the environment is also likely to remain strong, while the percentage calling for additional regulation could easily increase from a 47% plurality to a clear majority in the early part in the next century.

Americans continue to support balance and compromise

- The current view, held by 61% of Americans, that the environment and the economy can go hand- in-hand is likely to be held by even more Americans in the next century due to demographic changes combined with changes in policy. A strong majority of Americans do not believe that environmental problems must be divisive or polarizing.

Health remains highest-ranked among environmental concerns but is ironically low in reflected knowledge

- Health-related issues — for example, relating to air, water, and toxics — routinely garner the highest levels of public concern and support, but actual knowledge of the causes of these types of pollution is not very high. Nor is it evident that people understand the relationship of environmental factors to disease. Only 7% of Americans know, for example, that contaminated water is the leading cause of childhood death in the world.

Americans worry about environmental disaster but fail to see the role of the environment in world conflict

- A majority (56%) of Americans continue to feel that we are headed toward an environmental catastrophe well into the next century.

- However, few Americans suspect that the environment is already one of the most significant causes of war and conflict in the world and that this threat to security will increase in the next century.

There will be a dramatically new landscape for environmental solutions in the coming years through local and individual action

- Even though support for environmental regulation will likely remain high in the early part of the next century, Americans are looking to individuals, environmental organizations, and citizen groups to provide leadership on environmental solutions, rather than large businesses or government agencies.
- The 1999 NEETF/Roper Survey shows that Americans are quite willing to act on environmental solutions if it is within their power to do so and if they can take such actions as part of their ongoing daily activities.

Recommendations for the 21st Century

Working with colleague organizations, the Congress, and the Administration, NEETF recommends implementing the following:

A New Index for Environmental Problem-Solving: Understanding Where Individual Actions Can Make the Most Difference

- Develop and publish a new People-to-Problem Index that measures the degree to which a major environmental problem — such as run-off water pollution — can only be fully addressed by educating and involving people, small businesses, and local communities. The Index should highlight which critical national environmental issues are most suited to solutions at the grassroots and civic level, thus helping to prioritize and target educational efforts.

New Social Science Research: Determining What Motivates Individual Action on the Environment

- Increase the commitment of the government and the non-governmental sectors to learning-driven approaches to solving environmental problems. Foster a comprehensive new program of research on how people learn about environmental issues and what motivates them to work toward their solutions.

More Environmental Education for the Media: Improving the Public's Understanding of the Issues

- The American media is considered the most influential source of environmental information for adult Americans. Yet there are few efforts to more thoroughly and effectively educate the media on complex environmental issues of the next century. We must strengthen our efforts to provide deeper background and educational materials and briefings to members of the media including sound scientific information, maps and visuals, and more.

Mediation Skills Training: Helping Communities Solve Local Environmental Problems

- As we move into an age where more balance will be sought between the environment and the economy, more attention will be needed in creating partnerships and refining skills that can produce constructive negotiation and mediation.

Environmental Health Education: Reaching Health Care Professionals

- We must redouble our efforts to help people make the connection between the environment and health. This should include the environmental education and training for health care and public professionals.

PART I.

Environmental Attitudes

The 1999 NEETF/Roper Survey investigates the environmental attitudes, knowledge, and behaviors of adult Americans. This year, the theme of the survey was "How well prepared are Americans to handle the critical environmental issues of the first part of the 21st century?" As environmental solutions increasingly depend on the actions of countless individuals, businesses, and institutions, more will be required of people in their everyday lives. Unfortunately, the survey shows that Americans are not yet ready for their new roles.

One of the key findings of the survey is that relatively few people are knowledgeable about the environment, especially when it comes to environmental issues that are likely to dominate in the next 15 to 25 years. On issues such as global warming, chemicals in drinking water, and air pollution — issues that the public expresses concern over — the majority of the population is laboring under serious misconceptions. What's more, most people are largely unaware of how little they know. On key emerging environmental issues, most Americans will need to catch up, if they are to understand the coming issues in environmental protection and help play a role in solving the problems.

On key emerging environmental issues, most Americans will need to catch up

Standing on the threshold of the year 2000, most environmental scientists would say we are in for a "sea change" in the nature and scope of environmental problems. For one thing, we are beginning to understand how complex and intractable many environmental problems are. Our responses are attempting to keep pace on a sophisticated technological and scientific level. Thus, while in the 1970s the focus was on protecting certain species, today we are concerned with managing whole ecosystems. Ten years ago, we might have had the luxury of focusing on specific pollutants. Now, we need to better understand the long-term effects of how pollutants interact with other factors in complex eco-systems.

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At the same time, many of the principal environmental problems we face today — including air and water pollution — result as much from the accumulated actions of countless individuals and small businesses as from large factories, chemical plants, and government facilities. Without a knowledgeable and motivated population aware of its own responsibilities, our environmental future looks less bright.

A sound basis of environmental knowledge materially changes the way individuals view environmental issues. Knowledge is empowering in several ways. The more knowledge people possess about the environment, the less likely they are to be alarmed about potential for environmental disasters in the future, and the more likely they are to see an issue as being under their control. Consequently, they are more likely to take action or support actions that will actually benefit the environment. More knowledge also helps direct people's support toward larger strategies and policies that are needed to tackle environmental problems.

Ultimately, understanding what Americans know about the environment will help us tailor educational programs to specific topics and misconceptions, which in turn will help individuals and their leaders to better understand why laws are passed to protect the environment and how their actions affect the environment.

The 1999 NEETF/Roper Survey evaluates public attitudes as they exist today and have changed over time. General attitudes toward the environment have remained stable over the last two or three years. However, over the eight years in which survey data have been collected on this subject (see Figure 4, p. 12), the belief that current environmental laws and regulations do not go far enough is slowly shifting toward the belief that some laws have reached the right balance between environmental and economic interests. Even with this shift, Americans generally support additional government programs that address water and air pollution. In fact, relatively few individuals say current environmental regulations go too far.

Indeed, a significant finding of this year's study is that public support for the environment is likely to increase in America. Attitudes about environmental issues vary by gender, age, education, and region, as discussed below (see box on page 18 and Appendix A). In general, young people, women, and urban populations are more strongly positive on the environment. In the next 15 to 25 years, as young people and women assume more positions of leadership and as increased levels of urbanization and sub-urbanization occur, support for the environment can be expected to broaden and deepen.

As with the 1997 and 1998 Report Cards, the 1999 NEETF/Roper Survey used a quiz style format to examine public knowledge of the environment. The 1997 survey examined general environmental knowledge. Last year's survey investigated ten common myths that Americans believe about the environment. The 1999 survey focused primarily on knowledge and opinions about emerging environmental issues.

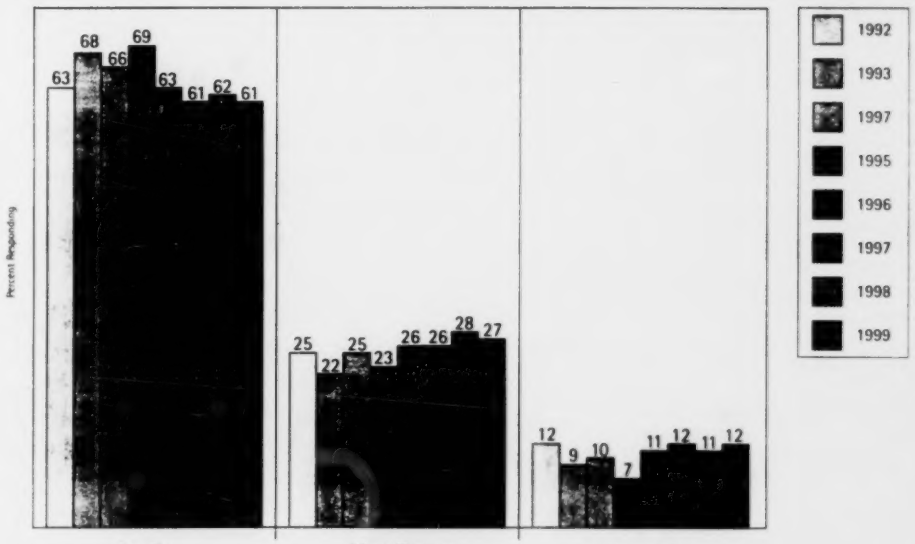
The survey is based on a nationally representative sample of 1,501 Americans, age 18 and older, surveyed by Roper Starch Worldwide in May 1999 by telephone. The margin of error for the sample as a whole is plus or minus two percentage points. A wider variation exists for subsamples, such as men, women, urban, rural, age cohorts, etc. Only statistically meaningful differences are pointed out in the text.

The rest of this section of the report presents the 1999 survey results on Americans' attitudes and opinions about the environment. Part II discusses Americans' knowledge of the environment; Part III reviews the activities that Americans report undertaking that have environmental benefits.

Americans feel that the environment and the economy can go hand in hand

A majority of Americans (61%) believe that environmental protection and economic development can go hand in hand. This view is consistent with the previous seven years of research. (Figure 1) A fairly small minority (27%, up four percentage points from 1995) believes that a choice must be made between the environment and economic development.

Figure 1: Environmental Protection and Economic Development Can Go Hand in Hand



Question wording: Most of the time, do you think environmental protection and economic development can go hand in hand, or that we must choose between environmental protection and economic development?

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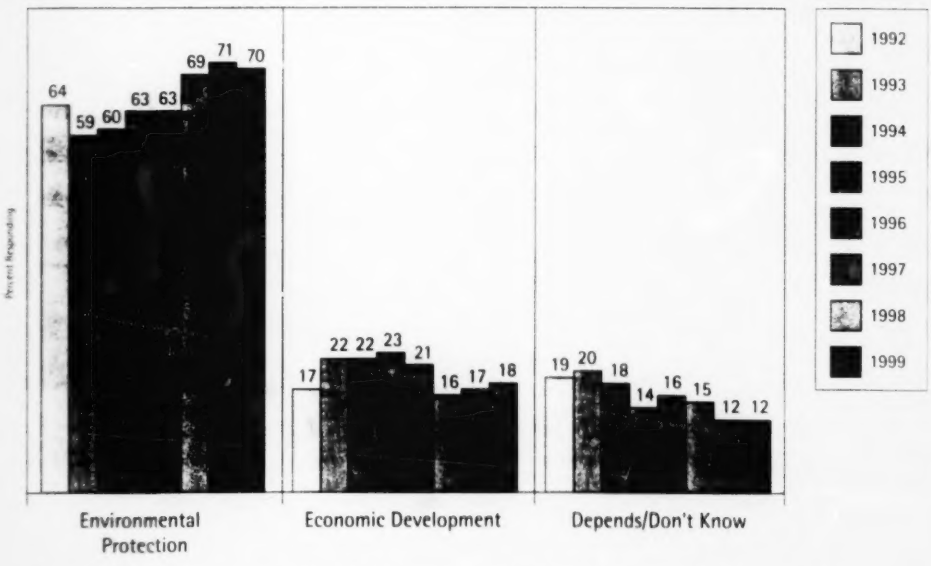
Of course, it comes as no surprise that a majority would hold a harmonious view of the environment and economy moving together, given the economic upswing that we are currently in. However, there is reason to believe that this positive view has deeper roots, since it is typical of younger and more educated Americans, and is thus likely to strengthen in the years ahead. Only half of older Americans (age 65 years or older) are optimistic about the environment and economy going hand in hand, compared to 63% in the 18-34 age category. Similarly, 67% of college-educated Americans were optimistic about this issue, compared to 57% of those with a high school education. These results mean that there may be a significant opportunity in the early part of the next century to move beyond the polarization that currently characterizes many public debates on the environment, as the college-educated proportion of the population ages.

Americans choose the environment when compromise is not possible

When environmental protection and economic development cannot be reconciled, Americans easily chose the environment (70%) over economic development (18%). In fact, the preference for environmental protection has increased 6 percentage points since 1992. (Figure 2) Whether this attitude could survive an extended economic recession remains to be seen, although it remained the majority opinion during the economic downturn of the mid-

Figure 2: When Compromise Is Impossible, Environment Is Favored Over Development



Question wording: *When it is impossible to find a reasonable compromise between economic development and environmental protection, which do you usually believe is more important: economic development or environmental protection?*

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Figure 3: Trend Data: Preference for the Environment Over the Economy, by Gender and Age

		Gender		Age			
	Total	Male	Female	18-34	35-44	45-64	65+
	%	%	%	%	%	%	%
1999	70	66	74	77	71	70	57
1998	71	68	74	77	69	68	66
1997	69	66	72	72	75	66	60
1996	63	58	69	69	63	60	59
1995	63	59	66	69	70	60	44
1994	60	57	62	66	63	59	42
1993	59	56	61	66	61	54	50
1992	64	64	64	73	62	57	56
Change since 1992	+6	+2	+10	+4	+9	+13	+1

1990s. Again, the preference for the environment is likely to increase in the future as women and younger people move into more positions of leadership. Figure 3 shows trend data by gender and age for preferences for the environment over the economy:

- **Gender:** Women (74%) are eight points more likely to choose the environment over economic development than are men (66%), an example of the "environmental gender gap" which will be noted often in this report.
- **Age:** The preference for the environment over the economy was especially strong among younger respondents (77% of those in the 18-34 age bracket). Even in the 65+ age bracket, though, over half of Americans (57%) would make the same choice.

Three quarters of Americans reject the notion that environmental laws and regulations have gone too far

In 1999, 47% of Americans believe that environmental laws and regulations have "not gone far enough" while another 29% believe that current laws "strike the right balance." Only 16% of Americans would say that current regulations "go too far." In sum, then, three quarters of Americans feel our environmental laws are either well-balanced or should go further.

These opinions have held steady for the past five years, although earlier in the 1990s, a larger majority of respondents felt that environmental regulations had not gone far enough (e.g., 63% in 1992). (Figure 4) Over time, opinions about regulations appear to have evened out, with a steady increase in the proportion of the public that believes that current environ-

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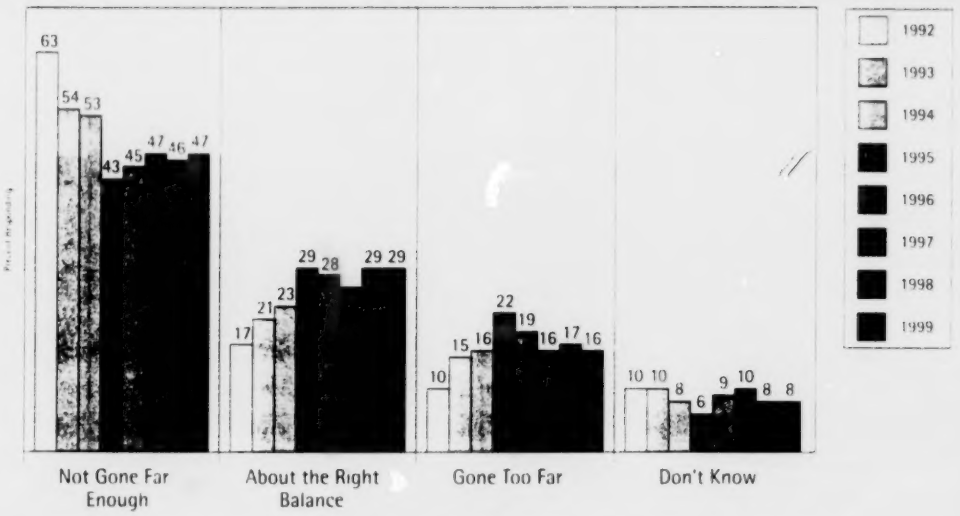
Figure 4: Opinion of Environmental Laws and Regulations



Question wording: *There are differing opinions about how far we've gone with environmental protection laws and regulations. At the present time, do you think environmental protection laws and regulations have gone too far, not far enough, or have struck about the right balance?*

mental laws and regulations strike the right balance. Support for this position has grown significantly among all age groups since 1992, and among both men (+10 points) and women (+13 points). Other research confirms that Americans have become more optimistic about the quality of the natural environment in recent years.[1]

Gender and age are again keys to understanding attitudes on this issue, as they were in previous years (Figure 5), but other variables also play an interesting role:

- **Gender:** Women are somewhat more likely than men to say that current laws and regulations do not go far enough (49% vs. 45%), and less likely than men to state that current laws go too far (13% vs. 19%) or strike the right balance (27% vs. 31%).

  Other surveys conducted by Roper Starch confirm a difference in gender on the subject of government regulation. Men, for example, are more likely than women to say there is "too much" government regulation of cable television, nuclear energy, fuel economy standards for cars, and the use of pesticides and herbicides. Women, on the other hand, are more likely than men to say current laws do not go far enough on toxic waste disposal, airline safety, prescription drugs, and the use of pesticides and herbicides.[2] Men

[1] Roper Starch Worldwide Inc., *Roper Reports*, March 1999.

[2] Roper Starch Worldwide Inc., *Roper Reports*, August 1998.

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Figure 5: Attitudes Toward Environmental Laws, by Gender and Age

		Gender		Age			
Attitude	**Total**	**Male**	**Female**	**18-34**	**35-44**	**45-64**	**65+**
	%	%	%	%	%	%	%
Gone too far	16	19	13	11	17	19	21
Not far enough	47	45	49	56	47	44	36
Struck about the right balance	29	31	27	28	29	30	29
Don't know	8	5	11	5	7	7	14

appear to be more optimistic about the quality of the environment;[1] this view may lead some men to suspect that no further regulations are needed to protect the environment.

- **Age:** Support for further environmental regulation is highest among younger Americans and declines steadily with age. Over half of younger Americans (56%) believe that regulations have not gone far enough, compared to 36% in the oldest age bracket. Conversely, only 11% of 18-34 year-olds believe that environmental laws and regulations have gone too far; that figure rises to 21% in the 65-and-over age bracket.

- **Regions:** Regional differences show up most prominently in the West, where fewer respondents (41%) support additional environmental regulation than elsewhere. In fact, in the West, 24% believe that regulation has gone too far, compared to 12 to 15% of respondents in other regions who hold that opinion. Since 1992, support for the "not gone far enough" position has waned the most in the Midwest (down 18 percentage points to 46%) and the West (down 18 points to 41%), while decreasing 14 points (to 49%) and 15 points (to 50%) in the Northeast and Midwest, respectively. Support for the "strike the right balance" view is up 16 percentage points among those living in the Midwest and up 12 points among those living in the West and in the Northeast.

- **Income:** Views on environmental regulation also appear to be inversely related to income level. (Figure 6) A clear majority of people (53%) earning less than $20,000 supported regulation, compared to only 42% of those who earned $50,000 per year or more.

- **Correlation with the Role of the Individual:** One might suppose that Americans who see an important role for individuals (see Figure 10) in solving our future environmental problems would be less inclined to support further regulation. This, however, is not the case; no significant differences were found between this group and others on this issue.

[1] Roper Starch Worldwide Inc., *Roper Reports*, March 1999.

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Figure 6: Views on Environmental Regulation, by Income

Attitude	Less than $20,000	$50,000+
Would pick the environment over the economy	72%	65%
Generally feel that regulation has not gone far enough	53%	42%
Agree we face an environmental catastrophe in the next ten years	57%	50%

Air and water regulation are especially important to Americans

Similar attitudes and trends are evident when the public is asked about five specific areas of regulation: water pollution, air pollution, protection of wild or natural areas, protection of wetlands, and protection of endangered species of plants, animals and insects. In each case, more Americans believe that current laws and regulations do not go far enough than believe that current laws strike the right balance or go too far.

Of the five components mentioned, Americans clearly rank water and air as more important than the others, presumably for health reasons. (Figure 7) Support for further water and air protection is at 69% and 62%, respectively, compared to 47% for further environmental regulation overall. Similar support for air and water protection was found in an August 1998 Roper survey.[1] Support for further wilderness protection drops to 52%, and below 50% for protection of wetlands and endangered species.

Interestingly, the percentage of respondents who support further environmental laws and regulations in general (47%) is at the low end of the scale — more reflective of the level of support for the least popular programs. When water and air pollution are specifically mentioned, support for further regulation rises another 15 to 22 percentage points.

Nevertheless, even the high level of support for further air and water regulation reflects a decline of 10 percentage points since 1992. The decreases are most notable among men, those living in the West, and those age 65 or older. For both issues, there has been a concurrent increase in those saying water and air pollution regulations now strike the right balance between environmental and economic concerns.

As might be expected, differences exist within gender, region, and age subgroups, and on the specific issues. Here are some key findings:

[1] Ibid.

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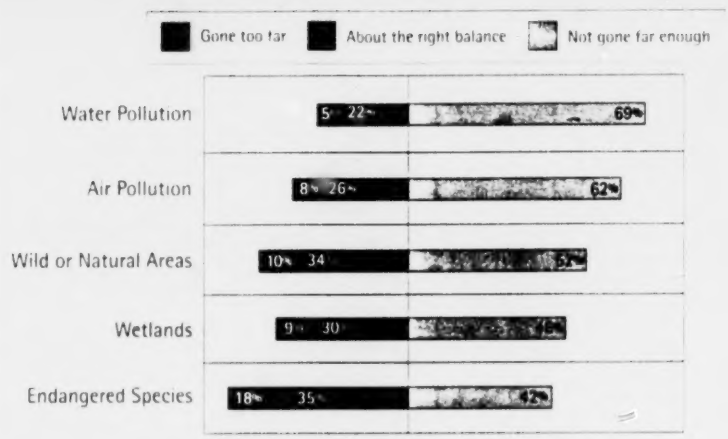
Figure 7: Current Regulation of Specific Environmental Issues



	Not gone far enough	
	1998	1992
Water Pollution	72%	79%
Air Pollution	61	72
Wild or Natural Areas	50	59
Wetlands	46	53
Endangered Species	44	51

Question wording: Thinking now about some specific areas, at the present time, do you think laws and regulations for (INSERT ISSUE) have gone too far, not far enough, or have struck about the right balance?

Rankings by Demographic Factors

- **Gender:** For both air and water pollution, women opt for the "not gone far enough" option more often than men, another example of the environmental gender gap. Men are more likely than women to say that regulations already go too far for endangered species, wetlands, and air pollution. Men are also 10 percentage points more likely than women (27% vs. 17%) to say that current laws to prevent water pollution strike the right balance, and they are six points more likely to state that air pollution laws strike the right balance (29% vs 23%).

- **Age:** A generation gap is also in evidence regarding attitudes toward specific environmental laws and regulations. Americans age 18-34 are consistently more likely than those older than 34 to say that current laws for the five specific environmental issues do not go far enough, while those 65 and over are the most likely to say that current laws go too far for endangered species, wetlands, and air pollution. Again, as the younger, pro-environment American population ages, the "not gone far enough" and the "strike the right balance" positions will likely grow in popularity, perhaps changing the outlook for future environmental laws and regulations.

- **Region:** Westerners stand out among the regional breakouts as being significantly more likely to consider current endangered species laws as going too far. This is not surprising, in light of local concerns and media coverage in recent years of controversies over the Northern Spotted Owl, river trout, and the use of public forest land. One-quarter of Westerners (26%) are of the opinion that current regulations go too far,

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Figure 8: Trend Data: Water Pollution Laws "Do Not Go Far Enough," by Gender and Region

		Gender		Region			
	Total	**Male**	**Female**	**Northeast**	**Midwest**	**South**	**West**
	%	%	%	%	%	%	%
1999	**69**	**65**	**72**	**69**	**63**	**73**	**67**
1998	72	69	76	68	74	75	70
1997	**72**	**69**	**74**	**76**	**71**	**72**	**68**
1996	73	68	78	73	76	72	73
1995	**70**	**66**	**74**	**76**	**66**	**72**	**68**
1994	76	74	77	76	73	78	76
1993	**77**	**73**	**80**	**73**	**73**	**80**	**79**
1992	79	78	79	76	77	81	80
Change in 'Do Not Go Far Enough' since 1992	**-10**	**-13**	**-7**	**-7**	**-14**	**-8**	**-13**
Change in 'Struck Right Balance' since 1992	+9	+11	+6	+9	+13	+4	+11

compared to 19% of those in the South, 16% of those in the Midwest, and just 9% of those in the Northeast.

Rankings by Environmental Issue

- **Water Pollution:** Support for government regulation of water pollution is consistently the highest of any environmental issue, with 69% of Americans (72% of women and 65% of men) saying regulation should go further. (Figure 8) Only 5% of adult Americans think water quality regulation has gone too far. Although this virtually unanimous level of support for water regulations might be assumed to be connected to recent public health scares (Cryptosporidium, Giardia, and other waterborne contaminants), in fact, support for additional regulation has been decreasing over the last seven years. The most dramatic decreases in support have been among Americans age 65-and-over (down 20 percentage points); males (down 13 points); residents of Western states (down 13 points); and residents of Midwest states (down 14 points).

- **Air Pollution:** Just 8% of Americans think that air quality regulation has gone too far, while 62% feel it has not gone far enough. (Figure 9) The greatest difference in support for air quality regulation is age-related. There is a 15 percentage point difference between the youngest and oldest age categories — 67% of 18-34 year olds support more regulation, compared to 52% of the 65-and-over group.

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Water Pollution

Of the various environmental threats mentioned, the American public consistently chooses water pollution as its greatest concern. Over two thirds of Americans (69%) think that water pollution laws do not go far enough. However, when asked about the most common source of water pollution, only 24% of Americans selected the correct answer — run-off from yards, streets, lots, and fields. Almost twice as many (44%) still think that waste dumped by factories is the most common source — a fact which may have been true in the past but is no longer the case (see Part II). This type of misconception can divert the attention of millions of Americans away from examining their own activities — such as their use of pesticides and fertilizer, washing cars, etc. — that may be seriously affecting the surface waters of the country.

Gender differences are also substantial on air quality regulation: 67% of women think air quality regulation should go further, compared to 56% of men. Not surprisingly, 68% of people who live in urban areas would seek more regulation of air quality while 57% of those in rural areas support additional air regulation. As the nation becomes less rural and more urban and suburban, this could have a significant effect on support for anti-pollution regulation.

Figure 9: Trend Data: Air Pollution Laws "Do Not Go Far Enough," by Gender and Age

		Gender		Age			
	Total	**Male**	**Female**	**18-34**	**35-44**	**45-64**	**65+**
	%	%	%	%	%	%	%
1999	**62**	**56**	**67**	**67**	**61**	**62**	**52**
1998	61	55	66	68	62	57	51
1997	**62**	**56**	**68**	**71**	**61**	**60**	**50**
1996	64	58	71	69	65	58	66
1995	**61**	**54**	**67**	**70**	**62**	**55**	**50**
1994	66	62	69	75	65	63	52
1993	**71**	**68**	**73**	**76**	**72**	**68**	**61**
1992	72	68	75	76	72	66	72
Change in 'Do Not Go Far Enough' since 1992	**-10**	**-12**	**-8**	**-9**	**-11**	**-4**	**-20**
Change in 'Struck Right Balance' since 1992	+8	+7	+7	+8	+11	+4	+7

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Environmental Attitudes and 21st Century Demographics

Key to understanding the national results in the 1999 NEETF/Roper Survey is an examination of the environmental attitudes, knowledge, and behavior of subgroups of the population. As noted throughout this report, gender and age appear to play the most prominent role.

Gender Gap: More of a Factor in the 21st Century

Women in America consistently show higher levels of support for the environment than do men, although both groups are supportive. As noted in this section, more women than men believe that environmental regulations do not go far enough, and they strongly favor the environment over the economy. The reasons for the differences between the sexes are not well understood and require more research.

Interestingly, although there were no significant differences in education levels between the men and women in the survey sample, the women were often less knowledgeable than the men about the environment (see Part II). Of 10 quiz questions asked in 1999, women averaged 2.7 correct answers, compared to 3.7 among men. Professional educators have hazarded a guess that this disparity may reflect the two-to-one ratio of men to women in science-based education and employment in America. Many of the environmental issues covered in recent NEETF/Roper Surveys have scientific underpinnings, and the specific knowledge of a scientific topic or professional experience with science may affect the quiz scores.

Generation Differences: A Major Pro-Environment Shift Ahead

On a number of questions in the 1999 NEETF/Roper Survey, attitudes differ considerably by age. In general, pro-environment sentiment declines somewhat as people grow older but it seems to fall off dramatically after the age of 65. For example, the preference for environmental protection over economic development decreases from 77% of young Americans (18-34) to 70-71% for middle aged Americans (35-64), and then drops to 57% among those age 65 and over.

Is the relative lack of support for the environment among older Americans due to a lack of education about the environment, a concern with their own economic vulnerability, or a holdover from the Depression era? The answer is is not clear. Conversely, we do not know whether younger Americans are idealistic or have received a better environmental education.

What we can suggest is that if the younger cohorts maintain their current levels of support for the environment as they age, pro-environment sentiment will receive a large boost over the coming quarter of a century. This change will appear in support for environmental laws, increased average environmental knowledge, and other issues including personal behaviors toward the environment.

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Over the last seven years, support for further air regulation has decreased the most among three subgroups: Americans age 65-and-over (down 20 percentage points); residents of Western states (down 17 points); and males (down 12 points).

- **Natural Areas Regulation:** For the most part, natural areas regulation has the same level of support as regulation in general. But looking at age differences again indicates more support for regulation in the future: a strong majority of 59% of the 18-34 age bracket believes regulation should go farther while just 41% of the 65-and-over age group shares that opinion.
- **Endangered Species Regulation:** This issue has the lowest support of any of the five examined in the survey with just 42% of adult Americans saying they think regulation for species protection should go farther. But, as with natural areas, support is likely to grow in the early part of the next century. A majority of younger Americans (51%) say regulation should go farther while just 27% of the 65-and-over group have that opinion. Urban residents are also more likely to support endangered species regulation (47%) than rural residents (40%).
- **Wetlands Regulation:** Similar patterns were found for wetlands regulation as with regulation in general although there was less of a gender difference.

Americans look to environmental organizations to solve future environmental problems

As many Americans might point out, government regulation is not the only way to protect the environment. In a question added to the 1999 NEETF/Roper Survey, respondents were asked to rate five entities or groups on the extent to which each can be relied on to solve the nation's worst environmental problems. Of the five, environmental organizations were considered the most reliable, with 46% of respondents saying these organizations can be relied on "a good deal." (Figure 10) This compares to ratings of 38% for citizen groups, 37% for individuals, and 32% for government agencies. At the bottom are private businesses, which only 25% of the public consider to be a reliable source of solutions for the nation's worst environmental problems.

The lower scores for government and industry are somewhat ironic in that a great deal of the environmental progress made in the past 30 years has been due to the regulation of industry. The relatively low score for government is also surprising in light of the fact that much of the public still feels that environmental regulations do not go far enough.

To interpret these responses, it may be helpful to reflect on trends in other public policy issues, including retirement planning and welfare vs. workfare. Americans may be realizing the limits of government action and reverting back to an earlier notion — that, given

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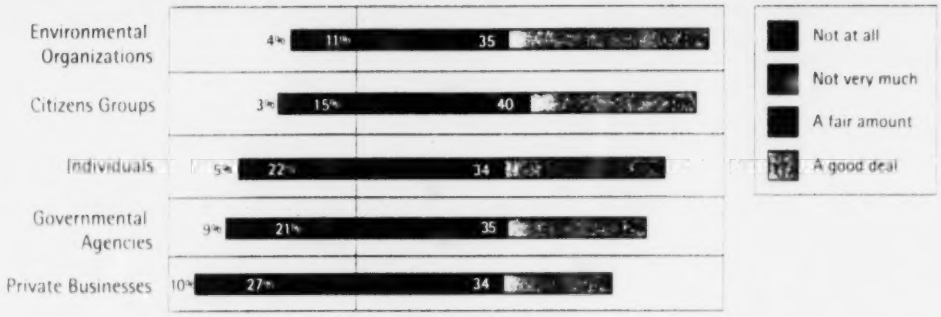
Figure 10: Extent to Which Groups Can Be Relied Upon to Solve Environmental Problems



Question wording: *In the future, to what extent do you think each of the following sources can be relied on to solve our worst environmental problems? Would you say (READ ITEM) could be relied on a good deal, a fair amount, not very much, or not at all to solve our most serious environmental problems?*

the right tools, individuals can address their own problems and meet their own needs without government assistance. If so, the favorable view of individuals, citizen groups, and environmental groups could herald a very welcome new level of local and civic involvement in environmental issues and new solutions beyond legislation and regulation, at a time when some of the most intractable environmental problems are indeed associated with individual behavior.

The ratings for this question were consistent across most demographic subgroups. Only the ratings for environmental organizations showed variability by age, gender, and region. For example, in line with their generally more pro-environmental position, respondents age 18-34 were the most likely (53%) to say that environmental organizations can be relied on "a good deal" to solve environmental problems. This approval rating fell to 46% for those age 35-44, 43% for those 45-64, and 37% for those age 65-and-over. Similarly, women showed greater belief in environmental organizations than did men, 50% vs. 41%. By region, those living in the Northeast (52%) were more likely than those in the South (47%), Midwest (45%) or West (41%) to say environmental organizations can be relied on a good deal to solve the worst environmental problems.

Americans weigh the seriousness of emerging issues

In order to see how prepared Americans are to address the emerging environmental issues in the first part of the 21st century, it is useful to determine how concerned they are about such issues, as well as how their views compare with commonly accepted views of scientists on what are likely to be the most critical issues in the future.

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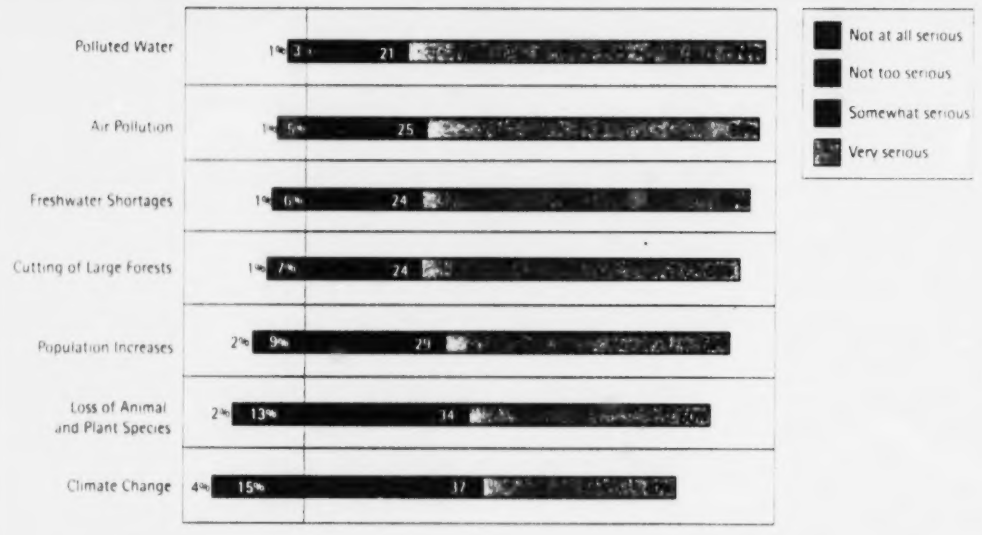
To that end, the 1999 NEETF/Roper Survey looked at seven environmental issues likely to be at the top of the public policy agenda over the next 15 to 25 years. The issues are: climate change, loss of animal and plant species, cutting of large forests, freshwater shortages, air pollution, water pollution, and population increase.

Four issues were rated "very serious" by two-thirds or more of the American public: polluted water (74%); air pollution (69%); freshwater shortages (68%); and cutting of large forests (66%). (Figure 11) Two others were named as very serious by at least one in two Americans — population increases (59%) and the loss of animal and plant species (50%). Only climate change was considered very serious by less than a majority of respondents (40%).

- **Polluted Water:** Poor water quality is recognized by 74% of Americans as a key issue of the future.
- **Air Pollution:** Scientists would agree with the 69% of respondents who ranked this issue as "very serious." Air quality is a major issue for both industrial and developing nations, and the trend is expected to continue.
- **Freshwater Shortages:** Nearly 7 in 10 Americans (68%) see this as a very serious issue even though North America is the richest continent in the world with respect to freshwater resources. Scientists and policy leaders would agree that water supplies will be a major

Figure 11: Whether Issue Will Be a Very Serious Problem in the Next 15 to 25 Years



Question wording: *I am now going to read you a list of some things that environmentalist have said may be problems in the next 15 to 25 years. For each item I read, please tell me how serious a problem you think it will be in the future... very serious, somewhat serious, not too serious, or not serious at all.*

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global environmental issue in the next century and this perception also seems to be held by the American public.

- **Cutting of Large Forests:** Fully 66% of Americans see this as a very serious issue in our future. This is a much higher rating than either climate change or loss of species, although it is related to both. Scientific evidence suggests that the existence of large forests is critical to species survival and may have a significant positive effect on lowering greenhouse gases associated with global climate change. Media attention to the loss of tropical rain forests across the world and debates over cutting of old growth forests in North America may contribute to the public's perception of the seriousness of this issue.

- **Population Growth:** Seen by most environmental scientists as the greatest challenge of the coming century, population is rated as very serious by 59% of adult Americans. World population recently reached the 6 billion mark — as compared to 1 billion in the year 1900 — and the demands of population growth and increasing industrialization are expected to place enormous stresses on the environment in the next 15 to 25 years.

- **Loss of Animal and Plant Species:** Half of Americans (50%) believe this is a 'very serious' rating, and another 34% say it is "somewhat serious." Conservation biologists worldwide are concerned with increasing rates of species extinction; a majority of Americans agree with them.

- **Climate Change:** Forty percent of Americans rate this as a very serious problem for the future while another 37% think of it as somewhat serious. Scientists are nearly unanimous that global climate change is a real phenomenon that could have detrimental effects on health, the economy, and the quality of life worldwide. However, doubts about global climate change have been given considerable play in the media, which could account for the relatively low (40%) "very serious" rating given to the issue. Alternatively,

Air Pollution

A substantial majority of Americans (62%) believe that air quality regulation has not gone far enough, while an even larger percentage (69%) rank air pollution as a "very serious" issue over the next 15 to 25 years. All the more surprising, then, is the fact that only 28% of Americans know that most of the nation's electricity is produced from polluting sources such as burning coal, oil, and wood. More Americans (37%) think that hydropower is the leading method of electricity production. In fact, water power accounts for approximately 10% of America's power needs. As debates over dirty power plants and the deregulation of the utility industry proceeds, Americans will need to brush up on the facts in order to make the right decisions.

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respondents might have felt that climate change is very serious, but that its effects will not be felt in the timeframe indicated (15 to 25 years), or the issue itself might not be understood well enough by respondents.

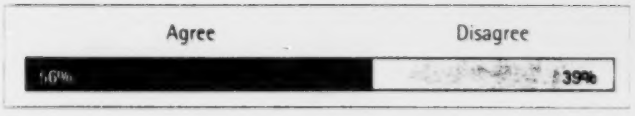
Many Americans foresee some type of "environmental catastrophe" in the next decade

Concern about the planet's future remains high. A majority of Americans (56%) believe that we may be headed for an environmental catastrophe in the not-too-distant future. (Figure 12) This sentiment is reflected in the majority of Americans who agree with the following statement: "The next 10 years are the last decade when humans will have a chance to save the earth from environmental catastrophe." This attitude is statistically unchanged from 1998 and down three points from 1997, evidence that concern about the earth's environmental future continues but is not increasing.

Interestingly, a full 40% of those who believe that environmental regulation has gone too far still feel that catastrophe looms in the next decade (vs. 65% of those who say current regulations do not go far enough). As in the past, women are more likely than men (59% vs. 53%) to agree that an environmental catastrophe could occur in the next ten years if something is not done to protect the planet. Concern about catastrophe decreases from 58% among those with a high school education to 50% of those with a college degree. Conversely, 46% of college-educated respondents disagree with the statement while 37% of high school grads disagree.

Figure 12: Environmental Catastrophe Imminent

"The next ten years are the last decade when humans will have a chance to save the earth from environmental catastrophe."



Agree

1992	1993	1994	1995	1996	1997*	1998	1999
49%	51%	52%	47%	48%	59%	57%	56%

**Prior to 1997, statement was asked as "The 1990's is the last decade when humans will have a chance to save the earth from the environmental catastrophe."*

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Americans fail to grasp the importance of environment in global security

In 1997, Secretary of State Warren Christopher delivered a speech noting that environmental issues would be a major, if not the major, global security issue of the next century. Factors contributing to its importance include rapid world population growth, significant rates of industrialization of formerly agricultural nations, and increased pollution and competition for resources. The 1999 NEETF/Roper Survey looked directly at this question to gauge public perception of the effect the environment could have on national and global security in the 21st century.

Americans were asked about several possible factors that could cause outbreaks of war and conflict. The results (shown in Figure 13) indicate that environmental factors (such as disputes over water rights) are seen as a very important cause of conflict by only 32% of Americans. Economic factors, racial tension, and territorial/border issues were each considered very important by a much larger 58% of Americans.

Figure 13: Views on Causes of War and Conflict

Factor	% Saying "Very Important"
Economic factors	58
Racial tension	58
Territorial or border issues	58
Environmental factors	32
Language barriers	22

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PART II.

Environmental Knowledge

An understanding of the environment of tomorrow begins with an understanding of the environment of today. But how much do Americans really know about the natural environment they encounter every day, and how much do they know about the emerging environmental issues of tomorrow? The 1999 NEETF/Roper Survey set out to measure what Americans know and what they think they know.

Most Americans say they know "a fair amount" about the environment...

Americans seem convinced that they have a sound knowledge of environmental issues and problems, as they have for the last four years (Figure 14). About 69% of the American public rate themselves as having either "a lot" (10%) or "a fair amount" (59%) of knowledge about environmental issues and problems. As in the past, men (74%) are more likely than women (66%) to report they have at least a fair amount of environmental knowledge. Younger Americans are more confident of their environmental knowledge — approximately 70% of respondents under the age of 65 reported that they know at least a fair amount about environmental issues and problems, compared to 61% among those 65 or older.

... But they don't!

Unfortunately, the level of knowledge that Americans have on environmental subjects does not match up to what they think they know. On seven of ten questions asked in the 1999 NEETF/Roper Survey about emerging environmental issues, more Americans gave an incorrect answer than answered correctly. The average was 3.2 correct answers out of 10 ques-

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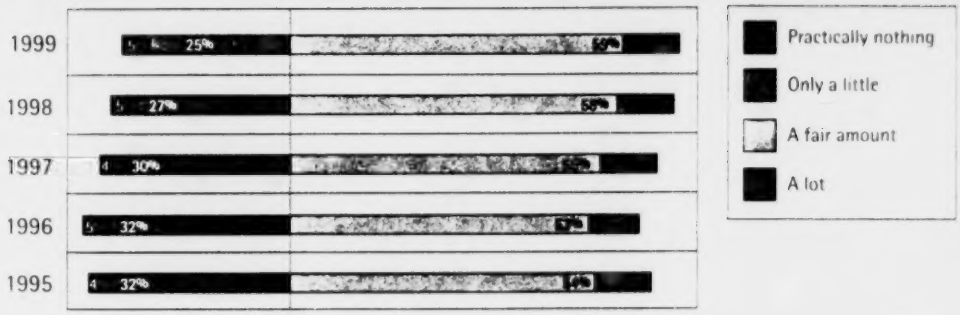
Figure 14: Self-Reported Knowledge of Environmental Issues and Problems



Question wording: *In general, how much do you feel you know about environmental issues and problems — would you say you know a lot, a fair amount, only a little, or practically nothing?*

tions. Figure 15 shows the percentage of respondents answering correctly on each of the 10 questions about emerging environmental issues. All of the issues have been covered in the media in recent years.

Several important points emerge from the data:

- **Self-perceptions:** Those who think they know a lot about the environment and environmental issues do, in fact, score better than those who say they know only a little or practically nothing about the environment — although even the "know a lot" group averaged just 4.0 correct answers (compared to 3.2 overall).
- **Gender:** Men are more likely than women to correctly answer seven of the 10 questions — although men averaged just 3.7 correct answers, women averaged only 2.7.
- **Education:** Americans with a college degree are more likely than those with a high school education or less to give the correct answer — although even those with a college degree averaged just 4.0 correct answers. (See the section below for a more complete discussion of education levels and environmental knowledge.)
- **Age:** Despite their pro-environment sentiments, 18-34 year olds averaged 3.1 correct answers, slightly above the 2.6 correct answers among the 65-and-older group, but slightly lower than the 3.4 correct answers given by those in the 35-44 and 45-64 age brackets.

These results lead us to believe that improved communication and dissemination of information about the environment should eventually improve actual knowledge. Clearly, the data show that much work needs to be done.

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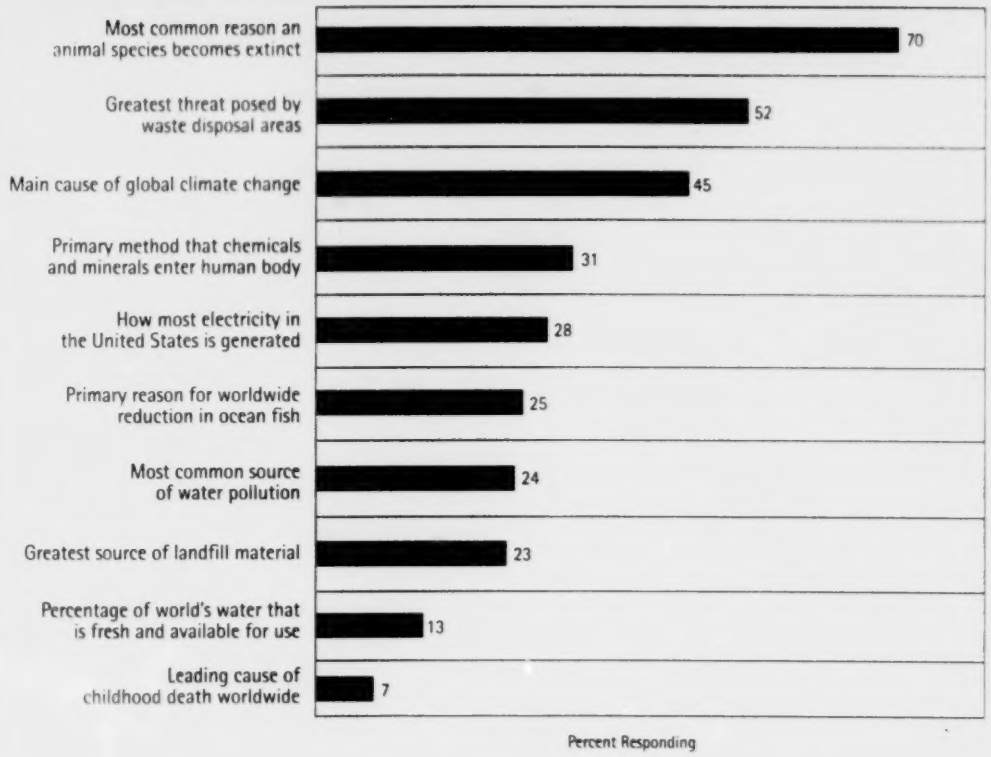
Figure 15: Knowledge of Emerging Issues: Percent Answering Correctly


Most common reason an animal species becomes extinct
70
Greatest threat posed by waste disposal areas
52
Main cause of global climate change
45
Primary method that chemicals and minerals enter human body
31
How most electricity in the United States is generated
28
Primary reason for worldwide reduction in ocean fish
25
Most common source of water pollution
24
Greatest source of landfill material
23
Percentage of world's water that is fresh and available for use
13
Leading cause of childhood death worldwide
7
Percent Responding

Specific quiz responses

Most Common Reason an Animal Species Becomes Extinct

Surprisingly, this issue received the highest number of correct responses of any of the 10 questions. Over two-thirds (70%) of respondents correctly replied that extinction is most commonly caused by the destruction of animal habitats by humans. On this issue, however, knowledge does not necessarily appear to lead to support — for example, as noted earlier, endangered species regulation received the lowest amount of support among issue areas. (See Figure 7 on page 15.) For this emerging issue, then, the challenge will be to turn knowledge into action, so that people see wetlands and other animal habitats not as threats to private property but as a way to protect animal species from extinction.

Greatest Environmental Threat Posed by Toxic Waste Disposal Areas

Perhaps two of the most frightening words in the environmental lexicon are "toxic waste." American communities are home to thousands of waste disposal sites that hold toxic waste. A slim majority of Americans know why waste disposal sites can be hazardous to human

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Test Your Knowledge!

	Survey Response
1. How is most of the electricity in the U.S. generated? Is it:	
a. By burning oil, coal, and wood	28%
b. With nuclear power	14
c. Through solar energy	4
d. At hydro electric power plants?	37
Don't know	18
2. What is the most common cause of pollution of streams, rivers, and oceans? Is it...	
a. Dumping of garbage by cities	17%
b. Surface water running off yards, city streets, paved lots, and farm fields	24
c. Trash washed into the ocean from beaches	5
d. Waste dumped by factories?	44
Don't know	9
3. What do you think is the main cause of global climate change, that is, the warming of the planet Earth? Is it...	
a. A recent increase in oxygen in the atmosphere	5%
b. Sunlight radiating more strongly through a hole in the upper ozone layer	26
c. More carbon emissions from autos, homes, and industry	45
d. Increased activity from volcanoes worldwide?	5
Don't know	19
4. To the best of your knowledge, what percentage of the world's water is fresh and available for use? Is it...	
a. 1%	13%
b. 5%	20
c. 10%	27
d. 33%?	17
Don't know	23
5. The current worldwide reduction in the number of ocean fish is PRIMARILY due to which of the following:	
a. Pollution in coastal waters worldwide	40%
b. Increased harvesting by fishing vessels	25
c. Changes in ocean temperature	12
d. Loss of fishing shoals and other deep sea habitats	6
Don't know	16
6. What is the leading cause of childhood death worldwide? Is it...	
a. Malnutrition and starvation	60%
b. Asthma from dust in the air	4
c. Auto and home accidents	17
d. Germs in the water	7
Don't know	12

– continued on the following page

	Survey Response
7. What is the most common reason that an animal species become extinct? Is it because...	
a. Pesticides are killing them	9%
b. Their habitats are being destroyed by humans	70
c. There is too much hunting	8
d. There are climate changes that affect them?	6
Don't know	7
8. There are thousands of waste disposal areas – dumps and landfills – in the U.S. that hold toxic waste. The greatest threat posed by these waste dispoal areas is:	
a. Chemical air pollution	19%
b. Contact with farm animals and household pets	5
c. Contamination of water supplies	52
d. Human consumption through contaminated food	6
Don't know	17
9. Many communities are concerned about running out of room in their community trash dumps and landfills. Is the greatest source of landfill material...	
a. Disposable diapers	28%
b. Lawn and garden clippings, trimmings, and leaves	8
c. Paper products including newspapers, cardboard, and packaging	23
d. Glass and plastic bottles and aluminum and steel cans	28
Don't know	12
10. Some scientists have expressed concern that chemicals and certain minerals accumulate in the human body at dangerous levels. Do these chemicals and minerals enter the body PRIMARILY through...	
a. Breathing air	32%
b. Living near toxic waste dumps	11
c. Household cleaning products	10
d. Drinking water	31
Don't know	16

Correct Answers: 1a, 2b, 3c, 4a, 5b, 6d, 7b, 8c, 9c, 10d.

health, with 52% correctly answering "contamination of water supplies." This is one of the few questions answered correctly by a majority of Americans. Seepage of toxic chemicals into streams and water tables is more likely than chemical air pollution (the answer given by 19%), consumption through contaminated food (6%), or contact with farm animals and household pets (5%).

Main Cause of Global Climate Change

Less than half of the American public realize that the cars they drive and the amenity-rich homes in which they live contribute to global climate change through increased carbon emissions. Among the general population, a plurality (45%) correctly identify emissions from autos, homes, and industries as the main cause of global climate change.

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Climate Change

Although 77% of Americans rated this as a somewhat or very serious problem for the future, they gave it the lowest score in terms of seriousness of seven environmental problems included in the survey. Only 45% of Americans realize that the cars they drive to work or for errands, and the electricity-happy appliances that they buy are responsible for carbon emissions that are bringing about global climate change. Although global climate change has received considerable media coverage in the last few years, the controversies and complexities of the phenomenon may have helped to obscure its causes. In addition, it is possible that people associate global issues together without careful distinction. Thus, one-quarter (26%) of Americans placed the blame for global climate change on sunlight radiating more strongly through a hole in the upper atmosphere, another issue of global significance but much more tangentially related to global climate change. Clearly, a good deal more environmental education will be needed to reach Americans as a whole on this emerging issue.

Primary Source for Chemicals and Minerals that Enter the Human Body

The impact of pollutants on human physiological systems is a growing concern and one that could loom large in our future. Scientists are expressing concerns about the accumulation in our bodies of a variety of chemicals encountered in the environment, from benzene in gasoline to mercury in fish to lead in drinking water.

- Approximately one-third of the public (31%) correctly identifies drinking water as the primary source for the ingestion of chemicals and minerals.
- Another third (32%) wrongly says that unhealthy chemicals enter the human body primarily through the air people breathe.

That these two answers receive similar support indicates the public's knowledge that water and air pollution can be dangerous if they contain pollutants. Nevertheless, Americans have not received sufficient information to differentiate between the two sources of pollution and perhaps do not understand the importance of water as a medium for ingestion.

Source of Most Electricity

Energy consumption is on the rise as households purchase appliances and computers which consume large amounts of electricity. Deregulation of the energy industry, which has already begun in a number of states, is likely to reduce the cost of electricity for many users, while also giving consumers the ability to choose how their electricity is generated. The method of generating electricity has enormous effects on the environment, depending on whether it uses renewable sources (such as solar, wind, or hydroelectric power) or fossil fuels (such

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as coal, wood, and oil) which contribute to air pollution and global warming. Understanding the sources of electricity generation will be important if Americans are to make environmentally-friendly choices.

- Only 28% of Americans know that most of the nation's electricity (some 70% of all electricity) is produced from sources such as burning coal, oil, and wood. This level is statistically unchanged from the 27% who gave this response in 1998.
- Surprisingly, 37% of Americans see hydropower (dams) as our leading method of electricity production, despite the fact that water power accounts for approximately 10% of America's power needs. This misunderstanding may stem from the public's associating electricity with major hydroelectric dams in the West, and it may lead the public to support erroneous positions in the global warming debate over greenhouse gas emissions.

This issue will be useful to revisit in the next few years as deregulation takes hold, to see if Americans become more aware of their energy sources.

Primary Reason for Worldwide Reduction in Ocean Fish

Most experts agree that ocean fish populations are declining, and governments at the federal and state level are enacting limits on the harvesting of ocean fish to reduce the depletion of fish populations. However, information about this issue is not reaching the public.

- Only 25% of Americans can correctly identify increased harvesting by fishing vessels as the primary cause of the reduction in the number of ocean fish.
- Instead, four Americans in ten (40%) place the main blame on pollution in coastal waters, while just over one in ten (12%) say changes in ocean temperatures are at fault.
- Importantly, Americans residing on the coasts of the United States (West, 30%; Northeast, 28%) are somewhat more informed about this issue than those living in the interior (Midwest, 23%; South, 22%), an indication that the local nature of a problem shapes the public's environmental knowledge.

Most Common Source of Water Pollution

This question investigates Americans' understanding of the effects of precipitation run-off from farm fields, roads, parking lots, and lawns. This kind of pollution — called "non-point source pollution" — is the leading cause of water pollution in America today and is expected to increase in magnitude and import because it is so difficult to address through such conventional approaches as regulation and permits. Although Americans routinely identify clean and safe water as a top priority, many do not realize that local pollution of streams and rivers has a substantial effect on water quality. The lack of understanding of water pollution and its major causes — particularly the role of individuals and small businesses in non-point source pollution — stands as an impediment to appropriate policies and grassroots action.

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- Only one American in four (24%, up significantly from 19% in 1997) knows that run-off is the leading cause of pollution of streams, rivers and oceans. Almost twice as many (44%) think the most common form of water pollution is waste dumped by factories, which was probably true over the last several decades. Another 17% of Americans believe garbage dumping by cities is the main cause of water pollution.

- As with most knowledge questions, education level makes a significant difference. Thirty-five percent of college grads answered correctly, while 20% of high school graduates got it right. On the other hand, as in previous years, college grads seem just as drawn to the conventional myth ("factories") as high school graduates (41% vs. 46%), indicating the strength of the prevailing notion.

- Gender and age differences on this issue were similar to other issues. For example, 28% of men answered correctly while 20% of women got it right. A quarter of those under age 65 answered correctly, compared to 19% of those 65-and-over.

- One interesting fact is that while 20% of urban dwellers answer this question correctly, 26% of rural residents got it right even though urban residents have slightly higher education levels. This may be a reflection of awareness of agricultural run-off in rural areas.

Greatest Source of Landfill Material

In some parts of the nation, garbage and its disposal are emerging as an important civil and environmental issue. Many communities have enacted recycling laws in an attempt to reduce the amount of garbage sent to landfills or incinerators.

- Despite recycling laws and the beginning of a switch to a paper-free society, paper products are still the number one source of landfill material across America. However, only about one American in four (23%) knows this fact, while 28% incorrectly think that disposable diapers are the greatest threat to our crowded landfills.

- Surprisingly, another 28% (up from 22% in 1998) say that glass and plastic bottles and aluminum and steel cans are the largest source of landfill material. This result contradicts the fact that these are the most heavily recycled items. It may be that mandatory recycling of these items leads people to think that they contribute greatly to landfill material, or the association of these items with recycling might also lead respondents to associate them with landfills.

Fresh Water Available for Use

The availability of abundant, clean water may be one of the most troubling questions Americans will face in the future. In arid regions of this country, water shortages are already a significant issue. Just 1% of the world's water is fresh water, and nearly one half of that is situated on the North American continent. This means that competition will be fierce in most other nations and water could become a leading environmental concern for the 21st century.

- In what turned out to be the second-most difficult question in the quiz, just 13% of Americans know that only 1% of the world's water is fresh and available for use. This may reflect a lack of interest or concern about global phenomena that do not impact all Americans.
- The misconception that there is more drinking water available than actually exists (64% gave an incorrect response) may make Americans less concerned about water conservation. Ironically, even though those who live in the American West are reminded of water needs daily, they did not have a significantly greater knowledge of this issue than respondents in any other region.

Leading Cause of Childhood Death Worldwide

As in 1998, the role of the environment in childhood death worldwide was the least understood of any of the environmental issues addressed in the 1999 NEETF/Roper Survey. Public health officials around the world have documented that millions of children die each year as a result of germs in water supplies. These germs often cause gastrointestinal disease which in turn leads to dehydration and even starvation.

The role of the environment in childhood death worldwide was the least understood of any of the environmental issues.

- Only 7% of the American public understands that contaminated water is the chief culprit. The majority of Americans (60%) believe it is a lack of food, rather than contaminated water, that causes most childhood deaths. This response likely reflects the fact that images of famine and children starving are much more common on television than waterborne diseases.
- Importantly, this misconception has increased 5 percentage points since 1998. This lack of understanding may prevent Americans from supporting much-needed assistance to clean water programs in developing countries.

The higher the knowledge of the environment, the greater the level of support

Recent NEETF/Roper Surveys have revealed a strong relationship between levels of actual environmental knowledge and environmental attitudes. This is important because of the interrelationships between knowledge, concern, and action. As environmental knowledge increases, pro-environmental attitudes and concerns about the state of the environment also tend to increase, and so do actions on behalf of the environment. Higher levels of knowledge also correspond somewhat to higher income and education levels. Figure 16 shows that knowledge of emerging issues was higher among college graduates than among high school graduates and those with some college.

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Figure 16: Percent Answering Environmental Knowledge Questions Correctly, by Education

		Education		
	Total	High school graduate or less	Some college graduate	College or more
	%	%	%	%
Most common reason an animal species becomes extinct	70	66	76	74
Greatest threat posed by waste disposal areas	52	46	54	67
Main cause of global climate change	45	39	53	51
Primary method that chemicals and minerals enter human body	31	26	36	37
How most electricity in the United States is generated	28	21	29	43
Primary reason for worldwide reduction in ocean fish	25	20	29	34
Most common source of water pollution	24	20	26	35
Greatest source of landfill material	23	21	26	29
Percentage of world's water that is fresh and available for use	13	10	16	18
Leading cause of childhood death worldwide	7	6	7	11
AVERAGE NUMBER OF CORRECT RESPONSES	3.2	2.7	3.5	4.0

Further analysis of the 1999 NEETF/Roper Survey results was done by examining the attitudes of respondents according to how many questions they got right on the quiz. (Figure 17) Respondents were split into three groups: a high-knowledge group who gave five or more correct responses to the quiz (22% of the participants); an average-knowledge group with 3 or 4 correct answers (39%); and a low-knowledge group with two or fewer correct responses (39%). Following is a discussion of the attitudes of these three groups on key questions in the survey.

- **Can the environment and the economy go hand in hand?** Two-thirds of both the high-knowledge group (65%) and the average-knowledge group (64%) believe that a balance can be found between the environment and the economy, well above the 55% response on the part of the low-knowledge group. It should be noted that 12% of the low-knowledge group had no opinion on this issue, compared to just 2% of the high-knowledge group.
- **If you must choose, would you pick the environment or the economy?** Environmental knowledge did not affect opinions on this issue. At least two-thirds of each group picked the environment over the economy: 68% of the high-knowledge group; 74% of the average-knowledge group; and 68% of the low-knowledge group.

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Figure 17: Environmental Attitudes and Activities, by Knowledge Group

	High Knowledge	Average Knowledge	Low Knowledge
Attitude:			
Agree the environment and economy can go hand in hand	65%	64%	55%
Would pick the environment over the economy	68%	74%	68%
Generally feel that regulation has not gone far enough	48%	50%	43%
Air regulation has reached the right balance	31%	28%	21%
Water regulation has reached the right balance	27%	22%	19%
Agree we face an environmental catastrophe in the next ten years	51%	59%	55%
Frequent participation in activities:			
Recycling	71%	64%	61%
Avoid use of lawn and garden chemicals	46%	40%	34%

- **Have environmental regulations gone too far, not far enough, or achieved the right balance?** The most telling difference across knowledge groups was on the question of whether regulations have not gone far enough: 48% of the high-knowledge group and 50% of the average-knowledge group see regulations as not going far enough, compared to 43% of the low-knowledge group. The same proportion (15%) of both high and average-knowledge groups agree on whether overall environmental regulation has gone too far, and there is no statistical difference with the low-knowledge group (17%). A third of the high-knowledge group, 29% of the average group, and 28% of the low group say that the right balance has already been achieved overall.

- **Air pollution regulation:** While majorities of Americans in all three knowledge groups believe that current regulations to fight air pollution do not go far enough, support for the "strike the right balance" position decreases as environmental knowledge decreases: 31% of high-knowledge Americans say current laws have achieved a balance between environmental and other concerns, compared to 28% of average-knowledge Americans who hold this opinion and 21% of the low-knowledge group.

- **Water pollution regulation:** As with air pollution regulations, majorities of Americans in all three knowledge groups believe that current regulations to fight water pollution do not go far enough, while small minorities of each group say that laws already go too far. Again, support for the "strike the right balance" position decreases as environmental knowledge decreases: 27% of the high-knowledge group say that current

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laws balance environmental and other concerns, compared to 22% of average-knowledge Americans who hold this opinion and 19% of the low-knowledge group.

- **Regulation of wetlands, wild or natural areas, and endangered species:** There were no significant differences among the knowledge groups regarding current regulations for wetlands, wild and natural areas, or endangered species.

- **Who can be relied on to solve environmental problems?** There were no significant differences between the knowledge groups on four of the five entities listed in the question. Only for government agencies was a trend evident, with 28% of the high-knowledge group and 29% of the average-knowledge group saying government agencies can be relied on a good deal, a figure that rose to 37% among the low-knowledge group.

- **Environmental catastrophe:** When asked whether the next ten years are our last chance to avoid a major environmental catastrophe, 51% of the high-knowledge group agreed, slightly lower than the figures for the average-knowledge group (59%) or the low-knowledge group (55%).

- **Seriousness of environmental problems in the future:** When asked how serious several environmental problems will be in the next 15 to 25 years, on four of the seven issues the seriousness rating rose among respondents with less environmental knowledge. This was true for freshwater shortages (61% high group; 69% average; 71% low), air pollution (55%, 71%, 74%), the loss of animal and plant species (40%, 51%, 56%), and climate change (29%, 42%, 46%). Only for the cutting of large forests did the "very serious" rating trend downward as environmental knowledge decreased (69% to 63%).

- **Rate of participation in activities:** Differences in environmental activities reported (see Part III for more discussion) emerged across knowledge groups in two of the eight environmental activities queried: recycling of newspapers, cans, and glass (71% high group; 64% average group; 61% low group); and avoiding the use of chemicals in the yard or garden (46%, 40%, and 34%).

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PART III.

Environmental Activities

Although they may not realize it, many Americans perform activities each day that benefit the environment in some way. This section of the report describes these activities and discusses how actions relate to beliefs and knowledge about the environment.

Americans take actions that benefit the environment, but are cutting back slightly

There are many activities people can perform which directly or indirectly benefit the environment. Asked how often they do each of eight activities that benefit the environment, a majority of Americans perform four of them "frequently." (Figure 18) One of the simplest behaviors tops the list: 83% report that they frequently turn off lights and electrical appliances when not in use. Do people consciously do this to benefit the environment or to save money on their electric bill? As far as the environment is concerned, it doesn't matter. Using less electricity protects the environment by reducing the need for power generation at electric plants, many of which burn pollutant-heavy oil or coal to produce energy.

Whether by law or of their own volition, 64% of Americans say they frequently recycle newspapers, cans and glass. Majorities of Americans also say they frequently try to cut down on the amount of trash their household creates (57%) and conserve water in their homes and yards (59%).

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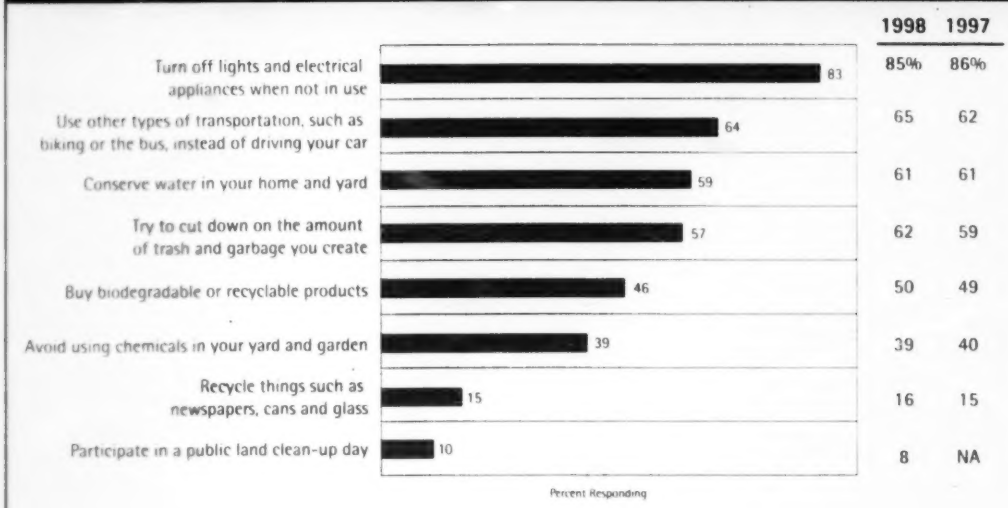
Figure 18: Environmental Activities Done Frequently in Day-to-Day Life



Question wording: *Now I would like to ask you about some of the things you may do in your day-to-day life. For each of the following things, would you please tell me whether you never do it, sometimes do it, or frequently do it.*

Surprisingly, the proportion of Americans saying they turn off lights, try to reduce the amount of garbage they produce, or purchase biodegradable products is down several percentage points from previous years. The reason for these changes is unclear. Roper's Green Gauge service finds a similar decrease in the proportion of Americans regularly engaging in several environmental activities.[5]

Interestingly, the activities that Americans perform most frequently that benefit the environment have two things in common. First, they can be done easily at home. Second, they are not necessarily linked just with the environment but have an economic dimension as well. In fact, fewer than two Americans in ten say they frequently try to avoid using chemicals in their yards or gardens or participate in public land clean-up days, the two activities on the list that would clearly be perceived as benefitting the environment.

According to the survey results (Figure 19), women put their pro-environment beliefs into action. In every category of action, women report performing environmental activities more frequently than men. The largest differences across the genders are in cutting down on trash and garbage (10 percentage point difference) and conserving water (8 percentage point difference).

[5] Roper Starch Worldwide Inc., *Green Gauge 1999*.

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Figure 19: Environmental Activities Performed Frequently, by Gender

	Total	Male	Female
	%	%	%
Turn off lights and electrical appliances when not in use	83	80	86
Recycle things such as newspaper, cans and glass	64	62	66
Conserve water in your home and yard	59	55	63
Try to cut down on the amount of trash and garbage you create	57	52	62
Buy biodegradable or recyclable products	46	40	51
Avoid using chemicals in your yard and garden	39	37	41
Use other types of transportation, such as biking or the bus, instead of driving your car	15	14	16
Participate in a public land clean-up day	10	9	12

Americans with more environmental knowledge take action more frequently

For all but one of the eight environmental activities listed, the likelihood that people perform the activities frequently increases with self–reported environmental knowledge. (Figure 20) The exception is turning off lights and appliances, where those with only a little or a fair amount of environmental knowledge report taking action more frequently than those with a lot of knowledge.[5]

People reporting a lot of environmental knowledge are substantially more committed to the environment and to taking action in support of it.

In general, though, people reporting a lot of environmental knowledge seem to be only mildly more knowledgeable than their peers, but substantially more committed to the environment and to taking action in support of it. To some degree, then, self-reported environmental knowledge may be a proxy for concern for the environment. People in this category translate their additional knowledge and substantial concern into action. They are more likely than average to recycle, conserve water, buy recyclable and biodegradable products, refrain from driving, avoid using chemicals in their yards, and participate in a cleanup day.

[5] There are many ways of interpreting this result. It may be that the primary motivation for turning off lights is saving money. Among people with a lot of environmental knowledge, the motivation may not be as high because they may be more likely to have energy-saving appliances that power down automatically, or compact fluorescent light bulbs that should not be turned off and on frequently.

Figure 20: Activities Done Frequently in Day-to-Day Life that Benefit the Environment, by Self-Reported Environmental Knowledge

		Self-Reported Environmental Knowledge		
	Total	**A lot**	**A fair amount**	**Little/practically nothing**
	%	%	%	%
Turn off lights and electrical appliances when not in use	83	78	85	83
Recycle newspaper, cans and glass	64	77	66	57
Conserve water in your home and yard	59	65	60	55
Try to cut down on the amount of trash and garbage you create	57	57	59	54
Buy biodegradable or recyclable products	46	57	46	40
Avoid using chemicals in yard and garden	39	48	40	34
Use other types of transportation; biking or the bus, instead of driving your car	15	23	16	12
Participate in a public land clean-up day	10	18	10	8

Increasing the commitment of Americans to the environment is thus extremely important. But equally or more important is increasing the knowledge that Americans have about environmental issues. Greater knowledge will lead to deliberative action, and especially to actions which can have a major impact on the environment. As the opportunities and need for individual action on the environment increase, so too is there a need for Americans to understand the choices open to them and the effects of their own behaviors on the environment.

Knowing how electricity is generated, for example, will be important as Americans have the opportunity to select an energy source under the new deregulated utility industry. Americans need to understand that run-off is the primary source of pollution in streams and rivers, but also how that run-off happens — from agriculture to washing their cars. Making a difference on global warming can only happen if the public understands where greenhouse gases come from and how their own use of cars and electricity creates emissions.

Americans clearly have the capacity to understand environmental issues. The fact that most Americans answered correctly that habitat loss is the main reason behind animal species becoming extinct suggests that even complex issues that are explained in a common sense, tangible way can hit a chord. The challenge ahead is to "bring home" other environmental issues. The need for Americans to understand the choices and impacts ahead of them has never been greater.

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Conclusion and Recommendations

In the eight years of the NEETF/Roper Surveys, some measures of environmental knowledge, attitudes, and behaviors have changed, but other measures remain the same. Americans are claiming to know more about the environment than ever, but actual knowledge of environmental issues remains low, even of issues that have local rather than national or global implications. Americans continue to favor environmental protection over economic development, but they are slowly retreating from demands for further regulations to protect the environment, with a growing but still small percentage saying the right balance has been achieved. (See Figure 21 for changes in attitudes between 1992 and 1999.) The public continues to engage in several simple activities that benefit the environment, but has not embraced some of the most important actions that are within their power to control. The environmental gender gap is still in effect, as is a sharp difference in attitudes between younger and older Americans.

Increased knowledge is the key to changing attitudes and behaviors on issues critical to our environmental future. If Americans can correctly answer an average of only 3 of 10 simple knowledge questions, there is a clear need to provide environmental information in a form that the American public can easily digest and act upon. Once the public understands the information it is receiving and feels confident in this knowledge, misconceptions about the environment (and the consequences of these misconceptions) should begin to subside.

However, the desire for additional environmental knowledge must come from within, not from above. Fortunately, Americans are beginning to express a willingness to rely on individuals, citizen groups, and environmental organizations rather than government agencies or private businesses to solve the nation's worst environmental problems. The proper messages from environmental organizations and citizen groups should be able to reach the busy yet generally open minds of the American public.

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Figure 21: Eight Year Trend: A Summary of Changes and Attitudes Over Time

	Total Public 1992	Total Public 1999
	%	%
Changed Over the Last Eight Years:		
Environmental Laws and Regulations:		
Not Gone Far Enough	63	47
Struck the Right Balance	17	29
Gone Too Far	10	16
Environmental Laws and Regulations: Not Gone Far Enough, For:		
Water Pollution	79	69
Air Pollution	72	62
Wild and Natural Areas	59	52
Wetlands	53	46
Endangered Species	51	42
If No Compromise Possible Between Environment and Economy:		
Favor Economic Development	17	18
Favor Environmental Protection	64	70
Self-Reported Environmental Knowledge:	(1995)	
Know a Lot / A Fair Amount	64	69
Know Only a Little / Practically Nothing	36	30
Stayed Statistically the Same Over the Last Eight Years:		
Relationship Between Environmental Protection and Economic Development:		
Can Go Hand in Hand	63	61
Must Choose Between the Environment and the Economy	25	27
Agreement with Phrase: "The next ten years" are the last decade when humans will have a chance to save the earth from environmental catastrophe."	59	56
*wording in 1992: "the 1990s"		

Recommendations

A New Index for Environmental Problem-Solving: Understanding Where Individual Actions Can Make the Most Difference

- Develop and publish a new People-to-Problem Index that measures the degree to which a major environmental problem — such as run-off water pollution — can be fully addressed only by educating and involving people, small businesses, and local communities. The Index should highlight which critical national environmental issues are largely

beyond the reach of government regulation and thus are most suited to solutions at the grassroots, civic, and individual levels.

- Some issues, such as the regulation of industrial toxic waste, would have a low People-to-Problem rating because they can indeed be addressed through regulation and involve larger institutions such as industrial businesses. Issues with a high People-to Problem rating would be best addressed through the actions of individuals, smaller businesses, farmers and smaller local communities. The Index should be published each year by an objective and reliable source as a reminder of how critical education of individuals is to our environmental future.

New Social Science Research: Determining What Motivates Individual Action on the Environment

- Increase the commitment of the government and non-governmental sector to learning-driven approaches to solving environmental problems. Foster a comprehensive new program of research on how people learn about environmental issues and what motivates them to work toward their solutions.

- Despite the importance of individual actions to our environmental future, the United States is heavily invested in the use of regulation and technology to address environmental problems. This dedication to regulation has been successful in making progress on industrial and municipal pollution but the causes of the emerging problems of the 21st century are more diffuse and increasingly occur as the result of millions of individual actions. An understanding of individual behavior and motivations for local action would seem to be a prerequisite for changing such behavior, but the research is lagging far behind the problems themselves. A major new commitment is needed to research such questions as: Why do people engage in some pro-environment activities and not others? How well do people understand the environmental consequences of their actions?

More Environmental Education for the Media: Improving the Public's Understanding of the Issues

- The American media appears to be the most influential source of environmental information for adult Americans. Yet, despite this importance, there are few organized efforts to more thoroughly and effectively educate the media on complex environmental issues of the next century. We must strengthen official efforts to provide deeper background materials and briefings to members of the media, including sound scientific information, maps and visuals, and more.

- Members of the media are barraged by information. Usually arguments on both sides of important public issues are presented to them and their job is to sort through any bias and get to the truth. They are often successful at this but, due to a superficial knowledge

of the subject matter — the science, the theories, the points of disagreement — the media will sometimes present an issue too simplistically, or characterize it as completely polarized when more reasoned and balanced middle positions are attainable.

- Providing objective, easy-to-absorb background materials to the media — much as the Congressional Research Service does for members of Congress — should be a priority and should be developed by such impartial sources as the National Academy of Sciences.

Mediation Skills Training: Helping Communities Solve Local Environmental Problems

- As we move into an age where more balance will be sought between the environment and the economy, greater effort will be required to create partnerships and refine skills that can produce constructive negotiation and mediation on local environmental issues.

- Too often environmental issues end up in divisive, all-or-nothing battles, even where a reasonable middle ground can be found. The NEETF/Roper data show strong public support for finding the creative middle ground but, unfortunately, the climate of most environmental issues calls for adversarial skills rather than mediation skills. Government and non-government sectors need to make a much stronger commitment to wide-scale mediation training for legislators, non-profit organizations, government officials, business leaders, and others who define environmental debates.

Environmental Health Education: Reaching Health Care Professionals

- We must redouble our efforts to help people make the connection between the environment and human health. This should include a much greater commitment to the environmental education and training of health care and public health officials.

- A large percentage of the disease symptoms encountered in a clinical setting by health professionals stem from the environment. Breathing problems, skin rashes, headaches, digestive problems, even chronic illnesses can have environmental origins. Unfortunately, the health care community receives little or no training on the environment and public officials supporting health care are not aware of the importance of this issue to improving health care, protecting the public, and lowering long-term health care costs.

- Medical and nursing school curricula need to be reformed to include more emphasis on the environment. Risk assessment tools need to be more widely used by practitioners. Pediatricians and primary care physicians should be a particular focus for environmental education. Some specialties should include environmental knowledge as a part of their board certification. There needs to be a more active and effective link between health care practice and public health information, particularly in serving poor communities.

APPENDIX A:

Special Subgroup Analyses

Throughout this report, attention has been given to differences in environmental attitudes, knowledge and behavior among demographic and attitudinal subgroups. This appendix examines the results for two demographic subgroups, gender and age.

The Environmental Gender Gap

As in past NEETF/Roper Surveys, important differences are evident when comparing the environmental attitudes of the two sexes, with women generally expressing greater pro-environmental sentiments than men. (Figure 22) For example, while a large majority of all Americans (70%) favor the environment over the economy if a choice between them must be made, 74% of women favor the environment, compared to 66% of men. Whereas 19% of men think environmental regulations in general have gone too far, just 13% of women feel that way. Conversely, more women (49%) than men (45%) say that current regulations should go further.

Similar patterns emerge with respect to particular types of regulations. There is an 11-point difference between women and men (67% versus 56%) on whether specific government regulations to fight air pollution should go further. Similarly, 72% of women feel that the regulation of water pollution needs to go further as compared to 65% of men. Importantly, though, support for the "not gone far enough" position has been eroding over time among both sexes, with a concurrent shift to the "strike the right balance" position.

Still, women are somewhat more inclined than men to worry about the planet's environmental future: 59% agree that the next ten years are the last chance to avoid a major environmental catastrophe, compared to 53% of men. Furthermore, women are more likely than men to say that air pollution (74% of women and 63% of men), polluted water (78% vs. 69%), and freshwater shortages (72% vs. 63%) will be very serious problems in 15 to 25 years. This pattern may be

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Figure 22: The Environmental Gender Gap, 1999

	Males	Females
	%	%
Relationship Between Environmental Protection and Economic Development:		
Can Go Hand in Hand	62	60
Must Choose Between the Environment and the Economy	25	28
If No Compromise is Possible Between Environmental Protection and Economic Development:		
Favor economic development	22	14
Favor environmental protection	66	74
Environmental Laws and Regulations:		
Not gone far enough	45	49
Struck the right balance	31	27
Gone too far	19	13
Environmental Laws and Regulations: Not gone far enough, for:		
Water pollution	65	72
Air pollution	56	67
Wild and natural areas	51	53
Wetlands	46	46
Endangered species	40	44
Environmental Knowledge:		
A lot / A fair amount	74	66
Only a little / practically nothing	25	34
Agreement with Phrase: "The next ten years are the last decade when humans will have a chance to save the earth from environmental catastrophe."	53	59

a reflection of greater environmental optimism among men than among women. In fact, Roper Starch finds women to be more concerned than men about a number of societal issues, such as illiteracy, AIDS, racism, nuclear warfare, and the spread of crime and violence.[7]

While a majority of both men and women support environmental protection regulations, the pro-environment feelings of American women remain stronger than those of men. Women are more likely than men to say that environmental organizations, citizen groups, and individuals can be relied on a great deal to solve the nation's worst environmental problems.

[7] Roper Starch Worldwide Inc., *Roper Reports*, December 1997.

This may indicate a greater openness among women than among men to being part of the solution to environmental problems.

Despite their more pro-environment position, for the third straight year women are less knowledgeable than men about the environment. (Figure 23) Of ten quiz questions in 1999, women average 2.7 correct answers, compared to 3.7 among men. This is critical because knowledge shapes concern and behavior, and the more knowledgeable people are about a topic, the less likely they are to be subject to the whims of popular opinion, or the perpetuation of environmental myths.

Figure 23: Environmental Knowledge of Emerging Issues, by Gender

	Total	Male	Female
	%	%	%
Most common reason an animal species becomes extinct	70	70	70
Greatest threat posed by waste disposal areas	52	59	46
Main cause of global climate change	45	51	40
Primary method that chemicals and minerals enter human body	31	34	27
How most electricity in the United States is generated	28	40	16
Primary reason for worldwide reduction in ocean fish	25	33	18
Most common source of water pollution	24	28	20
Greatest source of landfill material	23	28	19
Percentage of world's water that is fresh and available for use	13	16	10
Leading cause of childhood death worldwide	7	8	6
AVERAGE NUMBER OF CORRECT RESPONSES	3.2	3.7	2.7

The reasons for the differences between the sexes are not well understood and require more research. There are, for instance, no significant education level differences between men and women in the survey sample. Discussions with professional educators may provide a clue, however. They think the difference might be accounted for by the two-to-one ratio of men to women in science-based education and employment in America. Many of the environmental issues covered in the recent NEETF/Roper Survey have scientific underpinnings, and the specific knowledge of a scientific subject or professional experience with science may make the difference between a higher or lower score in the quiz.

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Age Differences

Age differences have a powerful effect on attitudes on the environment, as the 1999 NEETF/Roper Survey shows. In general, pro-environment sentiment declines as people grow older. For example, the preference for environmental protection rather than economic development decreases from 77% of Americans age 18-34, to 70-71% for ages 35-64, and to 57% among those age 65 and over.

This pattern moves in the opposite direction when Americans offer their opinion of current environmental laws and regulations. (Figure 24) The percentage saying that laws for protecting the environment "do not go far enough" decreases from 56% among 18-34 year olds to 36% among those age 65 and over. At the same time, the percentage holding the "gone too far" viewpoint increases from 11% among 18-34 year olds to 21% of those age 65 and over. The belief that environmental laws and regulations do not go far enough is down 21 percentage points since 1992 among those age 35-44, the greatest decrease among the age subgroups. (By comparison, this rating is down 19 percentage points among those 65+, down 13 points among those 18-34, and down 10 points among those 45-64.) Even with this steep decrease, 35-44 year olds remain more likely than older generations to say that current environmental laws do not go far enough.

Figure 24: Trend Data: Environmental Laws "Do Not Go Far Enough," by Gender and Age

		Gender		Age			
	Total	**Male**	**Female**	**18-34**	**35-44**	**45-64**	**65+**
	%	%	%	%	%	%	%
1999	**47**	**45**	**49**	**56**	**47**	**44**	**36**
1998	46	41	51	55	46	41	36
1997	**47**	**41**	**52**	**55**	**50**	**45**	**29**
1996	45	38	51	51	45	40	39
1995	**43**	**38**	**48**	**59**	**41**	**35**	**27**
1994	53	51	55	64	57	47	36
1993	**54**	**49**	**58**	**62**	**60**	**45**	**39**
1992	63	59	67	69	68	54	57
Change in 'Do Not Go Far Enough' since 1992	-16	-14	-18	-13	-21	-10	-19
Change in 'Struck Right Balance' since 1992	+12	+10	+13	+12	+12	+9	+12

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A generation gap is also in evidence with regard to attitudes toward specific environmental laws and regulations. Americans age 18-34 are consistently more likely than those older than 34 to say current laws for the five specific environmental issues do not go far enough, while those 65 and over are consistently the most likely to say current laws go too far for endangered species, wild or natural areas, and air pollution. As the younger, pro-environment American population ages, the "not gone far enough" and the "strike the right balance" positions will likely grow in popularity, perhaps changing the outlook for future environmental laws and regulations.

When Americans rate the extent to which environmental organizations can be relied on to solve the worst environmental problems, those 18-34 are the most likely age group to say that environmental organizations can be relied on "a good deal" to solve environmental problems (53%), a result in line with their generally more pro-environmental position. This rating falls to 46% of those age 35-44, to 43% of those 45 to 64, and to 37% of those age 65 or older.

Asked to describe the level of their own environmental knowledge, approximately 7 in 10 Americans under the age of 65 say they know at least a fair amount about environmental issues and problems, compared to 61% among those 65 or older. However, actual environmental knowledge as determined though the ten multiple-choice questions varies little by age, with uniformly low scores. Despite their pro-environment sentiments, 18-34 year olds average 3.1 correct answers, above the 2.6 correct answers among those 65 and older, but below the 3.4 correct answers given by those 35-44 and 45-64. Ideally, environmental knowledge would increase as the population ages, especially as those who have received environmental education in primary and secondary schools become adults, but this remains to be seen.

Whether the generational differences seen in the survey are a function of age or generation is difficult to say. That is, the patterns of responses may reflect the different attitudes and concerns facing an age cohort, or they may reflect the environmental and societal conditions that shaped a particular generation. Most likely, both factors are at play. As Figure 25 shows, the pattern of responses on the need for further regulation decreasing with age have not changed significantly in the last eight years; however, the large drop (21 percentage points) in support for further regulation among the 35-44 year old cohort between 1992 and 1999 may suggest differences in outlook among the generation born in 1948-57 versus those born in 1955-1964.

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APPENDIX B:

Methodology and Questionnaire

Methodology

Description of the Sample

A nationwide cross-section of 1,501 adults, 18 years of age and older, was interviewed for the 1999 NEETF/Roper Survey. Interviews were conducted by telephone from May 13 to June 3, 1999. Results are projectable to the total adult population of the continental United States who would be willing to be interviewed in a telephone study of this kind.

The margin of error due to sampling is plus or minus two percentage points at the .95 confidence level, although it is larger for the results for smaller subgroups of the public. For example, the sampling error is plus or minus four percentage points for results among the 490 adults in the sample aged 18-34. Previous versions of this study (known as the Times Mirror Magazines National Environmental Forum from 1992 to 1995) had a plus or minus three percentage point margin of sampling error.

Sampling Method

The basic sample was drawn at random from the adult population of the continental United States, excluding institutionalized segments of the public (such as those in Army camps, nursing homes, and prisons). Households contacted for the survey were selected at random by a procedure known as random-digit dialing, which ensures that households with unlisted telephone numbers, as well as those with listed numbers, are included in the sample. All interviews were conducted during evening hours on weekdays and all day on weekends to ensure that both working and as non-working segments of the population would be included.

Weighting Procedure

The demographic characteristics of the random sample were compared with the most recent Census Bureau estimates, and corrective weights were applied to ensure proper representation based on age, gender, and educational attainment.

Percentages Not Totaling 100%

Responses were computerized and rounded off to the nearest whole percentage. As a result, percentages in certain charts and columns may sometimes total slightly more or less than 100%. Also, in certain charts and analyses, the results of those who said "don't know" or chose not to answer may have been omitted.

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NEETF Environmental Attitudes and Knowledge Survey

Hello, I'm _____ from The Roper Poll and we're conducting an important survey today about the environment. This is a research study; we are not selling anything and all answers will be kept confidential. For this interview, may I please speak to the youngest adult male, who is at least 18, who lives there and is home? (IF NO MALE IS AVAILABLE) Then may I speak to the oldest adult female, who is at least 18, who lives there and is home?

1. Most of the time, do you think environmental protection and economic development can go hand in hand, or that we must choose between environmental protection and economic development?
   - ❑ Can go hand in hand
   - ❑ Must choose between environment and development
   - ❑ Depends (vol.)
   - ❑ Don't know

2. When it is impossible to find a reasonable compromise between economic development and environmental protection, which do you usually believe is more important: economic development or environmental protection?
   - ❑ Economic development
   - ❑ Environmental protection
   - ❑ Depends (vol.)
   - ❑ Don't know

3. There are differing opinions about how far we've gone with environmental protection laws and regulations. At the present time, do you think environmental protection laws and regulations have gone too far, or not far enough, or have struck about the right balance?
   - ❑ Gone too far
   - ❑ Not far enough
   - ❑ Struck about right balance
   - ❑ Don't know

4. Thinking now about some specific areas, at the present time, do you think laws and regulations for (READ ITEM) have gone too far, not far enough, or have struck about the right balance?
   a. Fighting air pollution
   b. Protecting wild or natural areas
   c. Protecting endangered species of plants, animals, and insects
   d. Protecting wetland areas
   e. Fighting water pollution

5. Please tell me whether you strongly agree, mostly agree, mostly disagree, or strongly disagree with the following statement:

   "The next 10 years are the last decade when humans will have a chance to save the Earth from environmental catastrophe."
   - ❑ Strongly agree
   - ❑ Mostly agree
   - ❑ Mostly disagree
   - ❑ Strongly disagree
   - ❑ Don't know

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6. In general, how much do you feel you yourself know about environmental issues and problems — would you say you know a lot, a fair amount, only a little, or practically nothing?

- ❑ A lot
- ❑ A fair amount
- ❑ Only a little
- ❑ Practically nothing
- ❑ Don't know

8. The next group of questions are about issues that have been covered in the media during the past two years or so. They are designed to tell us how much accurate information people are getting from television, newspapers, magazines, and other sources. Each question has four possible answers. If you don't know the answer, you can just state that you don't know. (INTERVIEWER: READ BOTH THE LETTER, e.g., "A", AND THE ANSWER, e.g., "BY BURNING OIL, COAL, AND WOOD". REPEAT AS NECESSARY)

9. How is most of the electricity in the U.S. generated? Is it...

- ❑ By burning oil, coal, and wood
- ❑ With nuclear power
- ❑ Through solar energy, or
- ❑ At hydro electric power plants?
- ❑ Don't know

10. What is the most common cause of pollution of streams, rivers, and oceans? Is it...

- ❑ Dumping of garbage by cities
- ❑ Surface water running off yards, city streets, paved lots, and farm fields,
- ❑ Trash washed into the ocean from beaches, or
- ❑ Waste dumped by factories?
- ❑ Don't know

11. What do you think is the main cause of global climate change, that is, the warming of the planet Earth? Is it...

- ❑ A recent increase in oxygen in the atmosphere
- ❑ Sunlight radiating more strongly through a hole in the upper ozone layer
- ❑ More carbon emissions from autos, homes and industry, or
- ❑ Increased activity from volcanoes worldwide
- ❑ Don't know

12. To the best of your knowledge, what percentage of the world's water is fresh and available for use? Is it...

- ❑ 1%
- ❑ 5%
- ❑ 10%, or
- ❑ 33%
- ❑ Don't know

13. The current worldwide reduction in the number of ocean fish is PRIMARILY due to which of the following...

- ❑ Pollution in coastal waters worldwide
- ❑ Increased harvesting by fishing vessels
- ❑ Changes in ocean temperature, or
- ❑ Loss of fishing shoals and other deep sea habitats
- ❑ Don't know

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14. What is the leading cause of childhood death worldwide? Is it...

- ❑ Malnutrition and starvation
- ❑ Asthma from dust in the air
- ❑ Auto and home accidents, or
- ❑ Germs in the water?
- ❑ Don't know

15. What is the most common reason that an animal species becomes extinct? Is it because...

- ❑ Pesticides are killing them,
- ❑ Their habitats are being destroyed by humans,
- ❑ There is too much hunting, or
- ❑ There are climate changes that affect them?
- ❑ Don't know

16. There are thousands of waste disposal areas – dumps and landfills – in the U.S. that hold toxic waste. The greatest threat posed by these waste disposal areas is...

- ❑ Chemical air pollution
- ❑ Contact with farm animals and household pets
- ❑ Contamination of water supplies, or
- ❑ Human consumption through contaminated food
- ❑ Don't know

17. Many communities are concerned about running out of room in their community trash dumps and landfills. Is the greatest source of landfill material...

- ❑ Disposable diapers
- ❑ Lawn and garden clippings, trimmings and leaves
- ❑ Paper products including newspapers, card board and packaging or
- ❑ Glass and plastic bottles and aluminum and steel cans
- ❑ Don't know

18. Some scientists have expressed concern that chemicals and certain minerals accumulate in the human body at dangerous levels. Do these chemicals and minerals enter the body primarily through...

- ❑ Breathing air
- ❑ Living near toxic waste dumps
- ❑ Household cleaning products, or
- ❑ Drinking water
- ❑ Don't know

19. How important would you say each of the following factors are in causing outbreaks of war and conflict? Are...(READ ITEM) very important, somewhat important, only a little important, or not at all important in causing outbreaks of war and conflict?

Racial tensions

Economic factors

Environmental disasters

Territorial or border issues

Language barriers

20. In the future, to what extent do you think each of the following sources can be relied on to solve our worst environmental problems? Would you say...(READ ITEM) could be relied on a good deal, a fair amount, not very much or not at all to solve ur most serious environmental problems?

    Government agencies

    Private businesses

    Environmental organizations

    Citizen groups

    Individuals

21. I am now going to read you a list of some things that environmentalists have said may be problems in the next 15 to 25 years. For each item I read, please tell me how serious a problem you think it will be in the future – very serious, somewhat serious, not too serious, or not at all serious. First...(READ ITEM). How serious a problem will this be in the future? (RE-READ ANSWER CATEGORIES AS NECESSARY)

    Climate change

    Loss of animal & plant species

    Cutting of large forests

    Freshwater shortages

    Air pollution

    Polluted water

    Population increases

23. Now I would like to ask you about some of the things you may do in your day-to-day life. For each of the following things, would you please tell me whether you never do it, sometimes do it, or frequently do it.

    a. Recycle things such as newspapers,cans, and glass
    b. Avoid using chemicals in your yard or garden
    c. Buy biodegradable or recyclable products
    d. Conserve wat ctrical appliances when not in use
    e. Turn off lights and electrical appliances while not in use
    f. Try to cut down on the amount of trash and garbage you create
    g. Use other types of transportation, such as biking or the bus, instead of driving your car
    i. Participate in a public land clean-up day

24. Finally, I am going to ask you about some different activities and hobbies that people can engage in. For each one, would you please tell me if you have done it in the past 12 months or not?

    a. Gone fishing
    b. Gone swimming outdoors
    c. Gone hunting
    d. Gone motor boating
    e. Gone downhill skiing
    f. Played golf
    g. Gone hiking
    h. Gone bicycling
    i. Gone running or jogging

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I have just a few questions for classification purposes.

D-1. Which of the following age categories includes your age?

- ❑ 65 or older
- ❑ 55 to 64
- ❑ 45 to 54
- ❑ 35 to 44
- ❑ 25 to 34
- ❑ 18 to 24
- ❑ Refused

D-2. What was the last grade of school you completed, not counting specialized schools like secretarial, art, or trade schools?

- ❑ 8th grade or less (1-8)
- ❑ Some high school (9-11)
- ❑ High school graduate (12)
- ❑ Some college (13-15)
- ❑ College graduate (16)
- ❑ Refused

D-3. Do you have any children and/or dependents living in this household under the age of 18?

❑ Yes ❑ No ❑ Refused

D-4. How many children are there living at home with you that are…(READ LIST)

Under 5 years old _____

5 to 10 years old _____

11 to 17 years old _____

D-7. Would you describe the area you live in as a: (READ LIST)

- ❑ Large city
- ❑ A medium size city
- ❑ A small city
- ❑ A suburban town
- ❑ A small town
- ❑ Or as a rural or farm area?
- ❑ Don't know

D-8. For statistical purposes only, we need to know your total household income. I am going to read off some income categories. Would you please stop me when I name the category that best describes the combined annual income of this household, including wages or salary, interest, and all other sources?

- ❑ Under $10,000
- ❑ $10,000 to $19,000
- ❑ $20,000 to $29,000
- ❑ $30,000 to $39,000
- ❑ $40,000 to $49,000
- ❑ $50,000 to $74,999
- ❑ Refused/don't know

THANK YOU FOR YOUR TIME AND PARTICIPATION!

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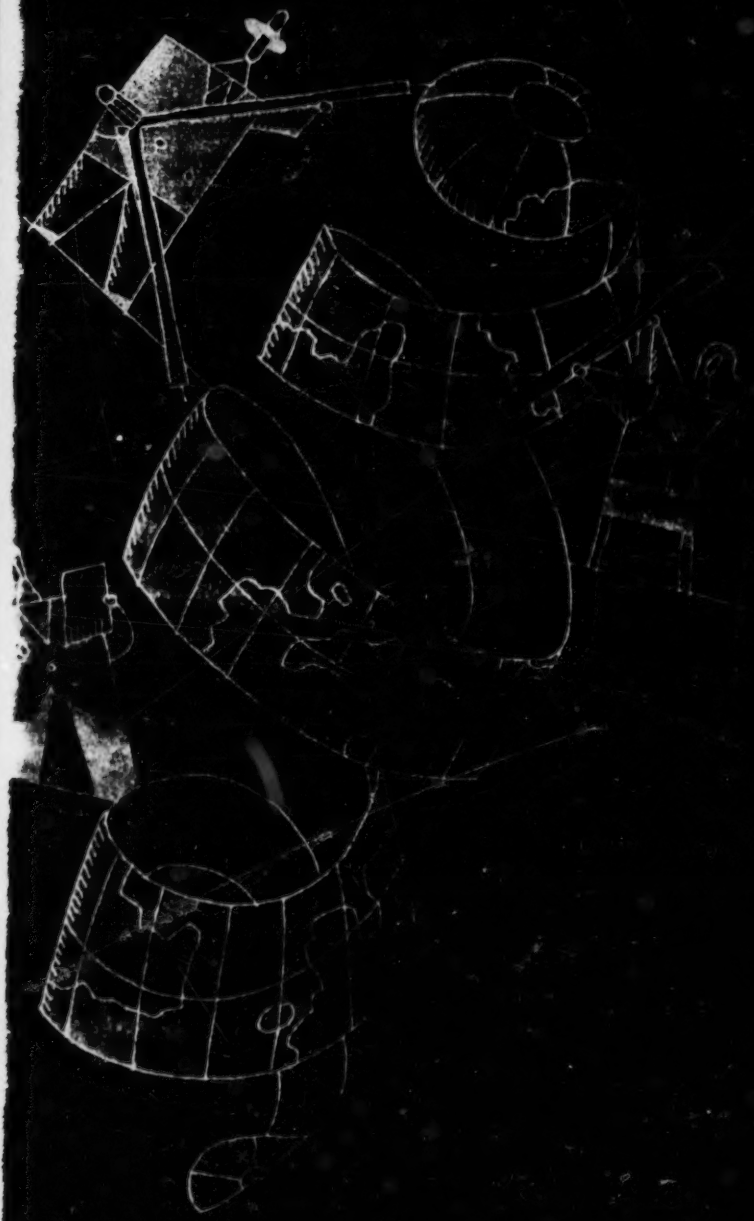

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